PB-217 911

FISH KILLS, 1969, CAUSED BY POLLUTION

Federal Water Quality Administration
Washington, D. C.

1969

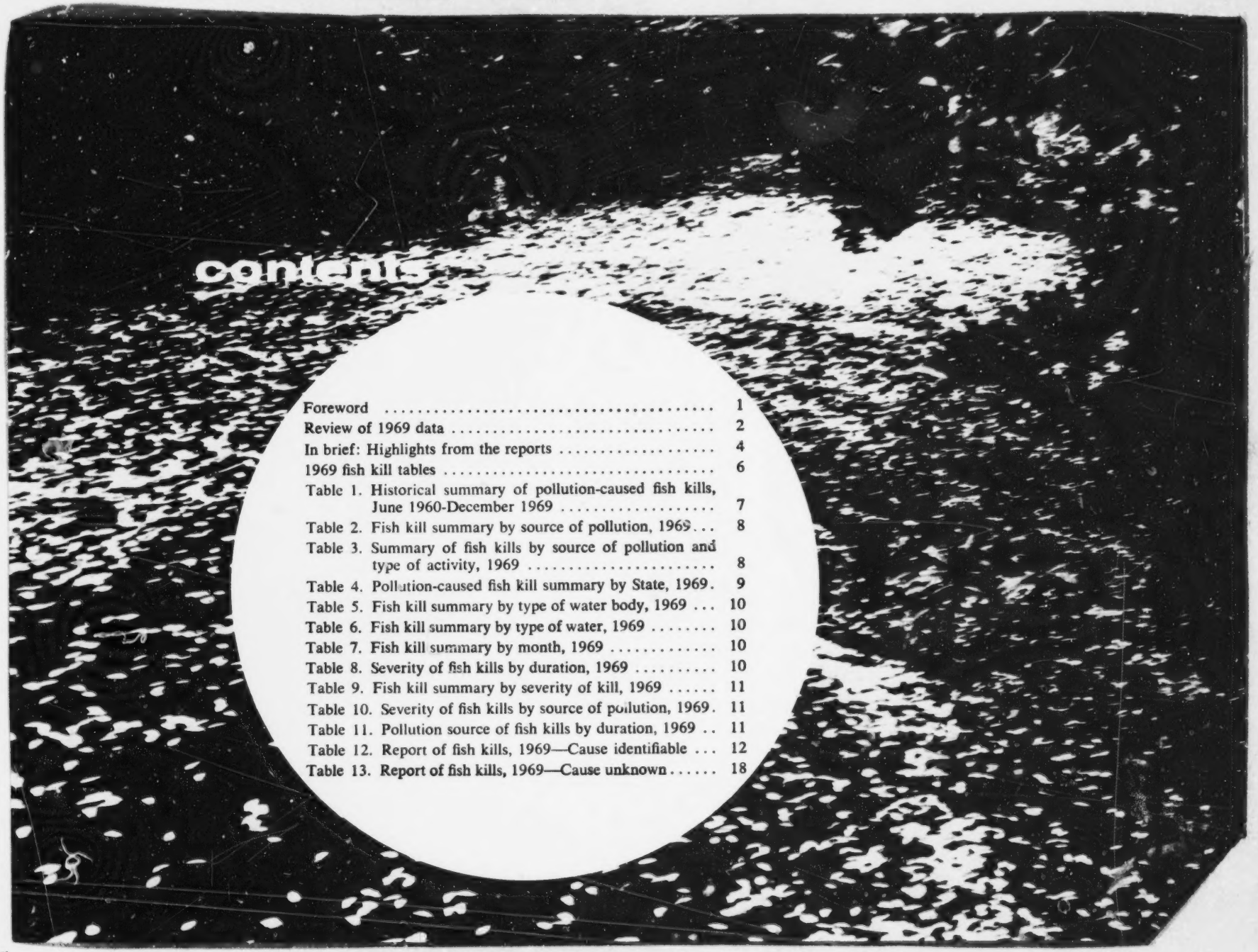
DISTRIBUTED BY:

NTIS

National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

PB 217 911

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151



contents

Foreword 1
Review of 1969 data 2
In brief: Highlights from the reports 4
1969 fish kill tables 6
Table 1. Historical summary of pollution-caused fish kills, June 1960-December 1969 7
Table 2. Fish kill summary by source of pollution, 1969 ... 8
Table 3. Summary of fish kills by source of pollution and type of activity, 1969 8
Table 4. Pollution-caused fish kill summary by State, 1969. 9
Table 5. Fish kill summary by type of water body, 1969 ... 10
Table 6. Fish kill summary by type of water, 1969 10
Table 7. Fish kill summary by month, 1969 10
Table 8. Severity of fish kills by duration, 1969 10
Table 9. Fish kill summary by severity of kill, 1969 11
Table 10. Severity of fish kills by source of pollution, 1969. 11
Table 11. Pollution source of fish kills by duration, 1969 .. 11
Table 12. Report of fish kills, 1969—Cause identifiable ... 12
Table 13. Report of fish kills, 1969—Cause unknown 18

1969 FISH KILLS

foreword

Water pollution killed an estimated 41 million fish in 45 States in 1969. This was by far the highest number of fish deaths reported since the annual census began in June 1960.

The 1969 figure of fish fatalities represented an increase of 170 percent over 1968 when about 15 million fish died in 42 States. Since fish kill census-taking began, in June 1960, a total of 144.6 million fish have been reported killed in more than 4,200 separate incidents.

The record increase in fish kills reported in 1969 can be related in part to the greater cooperation given by State reporting officials, to improved reporting practices, to greater public attention to fish kills, and to an unusually large single kill.

By far the largest single pollution-caused fish kill reported in 1969—26.5 million fish—occurred in Lake Thonotosassa at Plant City, Florida. Effluent from industrial and municipal sewage treatment operations has been entering the lake untreated for some 15 years. Nutrients in these wastes reduced the oxygen in January 1969 to a level in which fish could not survive.

Industrial operations were responsible for both the highest number of incidents and the highest number of fish killed in 1969. Some 199 cases of industrial pollution were reported, resulting in the death of 28.9 million fish. Municipal pollution, which in 1968 accounted for most of the fish deaths—7.0 million—killed the fewest number of fish in 1969—1.2 million.

Of the five States not included in the census, Hawaii submitted two reports of kills but the source of the pollution could not be determined. Two States—Nevada and North Dakota—reported no fish kills. There were no reports from Maryland and Mississippi.

The annual fish kill reports are received from cooperating State fish and game and State pollution control agencies. The reports are prepared in cooperation with the Department of the Interior's Bureau of Sport Fisheries and Wildlife.

More detailed information on the fish kills reported in 1969 is presented in the section "Review of 1969 Data."

review of 1969 data

The loss of 41 million fish in 1969 killed by pollution in the Nation's waters was about 26 million more than in 1968 when some 15 million fish died. The 1969 figure was based on 465 reports of pollution-caused fish kills received by the Federal Water Quality Administration.

Of the 465 reports submitted, 382 specified the number of fish that died—40.6 million. In the remaining 83 reports, the fish losses were expressed only in such general terms as "several thousand" or by pounds. These reports were assigned averages formulated from reports which gave actual counts.

Another 128 fish kills were reported, but the causes of these deaths could not be determined. Pollution, however, was suspected in a number of the cases.

The average size of the fish kill dropped slightly in 1969, from 6,000 in 1968 to 5,900. The record was set in 1963 when the average was 7,800. Municipal pollution led the averages in 1969, with 7,200. Transportation operations were next, with 6,400. As in previous years, the averages were derived after eliminating 12 reports of 100,000 or more fish killed as being unrepresentative. The full list of major kills in 1969 is given in the table on the following page.

source of kills

Industrial pollution was identified in the reports as the largest killer of fish during 1969. About 70 percent—28.9 million fish—died from this type of pollution. Industrial wastes also accounted for the largest number of incidents—199.

Wastes from cities, which in 1968 caused most of the fish deaths, accounted for the fewest deaths in 1969—1.2 million. Agricultural operations such as drainage and the use of fertilizers, which in 1968 killed the fewest fish, ranked second in 1969, with 6.4 million fish fatalities.

"Other operations" ranked third in the number of fish killed, with 2.4 million. This category includes pollutants from such activities as highway and building construction, airport and service station operations, and mosquito control.

The fourth ranking category—transportation operations—was responsible for the loss of 2.1 million fish. Pollution by transportation occurs when a pipeline springs a leak, sending its oil flowing into streams, or when a railroad tank car overturns, spilling its lethal liquid into a waterway.

Pollution caused by the manufacturing and processing of food products was responsible for the death of almost 27 million fish. Undoubtedly the worst case in 1969 involving primarily pollution from this source was the killing of 26.5 million fish in Lake Thonotosassa at Plant City, Florida. In this situation, the accumulation of untreated organic wastes reached a point sufficient to reduce the dissolved oxygen levels below that necessary to sustain all forms of fish life.

The estimated percentage of game fish lost in 1969 rose considerably. Almost 32 percent—13 million—of the fish killed in 1969 were game species, as compared with 9 percent—1.3 million—in 1968. Not enough data were available to make a meaningful estimate of the number of fish of commercial value that were killed in 1969.

The widespread use of insecticides and herbicides by the various types of operations brought on the death of about 6 million fish. Agricultural operations were responsible for nearly all of these fatalities. Insecticides or herbicides were the most often-named cause in 80 reports on agricultural activities, with 60 of these reports giving a specific number of fish killed.

duration and severity of fish kills in 1969

The average duration of all kills in 1969 was higher than in 1968—3.11 and 2.94 days, respectively. However, the average duration of the "total" kills in 1969—4.02 days—was lower than the comparable figure for 1968—4.33 days.

By source of pollution, fish kills attributable to municipal operations lasted the longest

in 1969—3.41 days, on the average. Agricultural fish kills ranked next in duration—3.23 days, on the average.

Measurement of the severity of a fish kill is reported in terms of "total," "heavy," "moderate," or "light." More than 35 percent of the reported fish kills in 1969 were classified as "heavy" kills, as compared with approximately 40 percent in 1968. About 18 percent of the kills in 1969 were classified as "total." More than one-fourth—28 percent—of the transportation-caused fish kills were considered "total," while only 8 percent of the municipal kills were classified as such.

fish kills by waterways and by month

Unlike the pattern in past years, most of the fish fatalities occurred in lakes. Pollution in lakes caused the death of almost 30 million fish, or about 74 percent of the fish killed in 1969. The kill which occurred in Lake Thonotosassa alone accounted for 88 percent of the fish lost in the lakes.

Based on past records, summer months seem to take the heaviest toll of fish, but any month is apt to produce an unexpected rise in fish fatalities. The greatest number of fish kills in 1969—66—occurred during August, but the death totals were highest during July when nearly 7 million died, as compared with 721,000 in August. The months of April, October, and September followed in that order. The fewest number of fish died in February—15,000.

MAJOR KILLS—100,000 OR OVER

Lake or stream	Near or in	State	Number of fish	Operation
Locust Fork—Warrior River	Port Birmingham	Alabama	751,000	Poisons
Lewis & Clark Lake	Rushville	Missouri	158,000	Manure drainage
Arroyo Colorado	Brownsville	Texas	5,000,000	Poisons
San Francisco—Gila River	Clifton	Arizona	327,518	Mining
Drakes Creek	Franklin	Kentucky	599,453	Chemicals
Quittaphilla Creek	Annville	Pennsylvania	100,000	Mining
San Antonio River	San Antonio	Texas	100,000	Chemicals
Lake Thonotosassa	Plant City	Florida	26,526,690	Food products
Dwinnell Reservoir	Siskiyou County	California	637,900	Power
Mud Creek	Fackler	Alabama	1,500,000	Rail transportation
Middle Branch Portage River	Wood County	Ohio	300,064	Pipeline transportation
Boone Lake	Johnson City	Tennessee	2,354,126	Thermal

The annual census of fish kills cannot be considered complete. Numerous small kills resulting from pollution go unnoticed or unreported. Also, significantly large kills often are not included because there is not enough information as to whether the kills were produced by pollutants or natural causes. It is difficult and often impossible to determine the actual cause of a kill.

Despite these gaps, the data compiled in the annual fish kill census are of great significance not only because they provide basic and useful information, but they also serve to point out the pollution problems, and alert public officials and the public itself to the need for stricter safeguards to keep dangerous substances out of the Nation's water resources.

IN BRIEF -

highlights from the reports

The compilation and tabulation of information on pollution-caused fish kills, as reported by State agencies, was begun on June 1, 1960, in an effort to determine and publicize the causes and extent of such losses.

Since then, State fish and game and water pollution control agencies have provided information on some 4,200 separate pollution-caused fish kills involving more than 140 million fish and a wide variety of pollutants.

The value and success of the reporting activity by the States generally depend on two factors: (a) how well a State agency is set up to respond to and investigate reported kills, and (b) how cooperative fishermen and other persons along lakes or streams are in reporting a fish kill to local authorities as soon as it is discovered. In most cases, even a short time lapse between the discovery and the investigation of a fish kill spells the difference between a full and accurate report and incomplete findings that limit the value of the information.

Printed report cards and suggested guidelines for filling out the cards are provided State investigators. An especially interesting item on the form enables the reporting official to give additional information which will help to classify the cause of the kill or to clarify some of the information already shown. This item is particularly useful when any unusual, spectacular, or new developments relating to the fish kill warrant explanation.

Since these additional remarks sometimes have a greater impact than cold statistics, the highlights of some of them are printed here.

Old sawdust lagoon and coal slag pile were bulldozed into a stream, resulting in the release of an unspecified amount of organic material and sulphuric acid. Almost 9,400 fish were killed.

A derailed tank car was left overturned for 3 days, resulting in the leakage of a large quantity of diesel fuel into the stream. About 29,000 fish died.

Toxaphene was sprayed on a herd of hogs near the stream. Some of the pesticide drained into the stream. Some 2,000 fish died.

Pesticide leaked from drums used to support a private boat dock, causing the death of at least 3,000 pounds of fish.

Chemicals released from metal fabricating plant entered the stream from roadside ditch, taking a heavy toll of goldfish, bullheads, sunfish, and minnows.

Excessive amounts of nutrients, washed into the lake from a septic tank and agricultural drainage, resulted in extensive plankton blooms. High water temperatures caused the plankton to die off, eliminating dissolved oxygen. Some 158,000 fish, mostly nongame, were killed.

Wastes from paper company operations entered the stream, killing 1,000 fish.

Guthion and DDT sprayed on cranberry bogs located on tributary to lake entered water and killed 3,000 fish.

Poisonous waste, probably cyanide, in municipal sewerage system was responsible for the death of 6,500 fish. This was the third straight year that a fish kill has occurred in the vicinity of this municipal sewage treatment plant, and efforts are being made to collect damages for the fishlife destroyed.

Cleaning agent was discharged into the stream by a soft drink bottling plant, killing almost 2,000 fish and all other aquatic life.

Operator of a spraying rig dumped empty insecticide bags into the stream and also backflushed sprayer when he lost his pump prime. About 150 fish died.

Metals plant discharged unknown pollutant into the stream through a 12-inch pipe, killing almost 2,000 fish. In 1966 and 1967, there were four fish kills in this same area. Investigations following each fish kill led to the pipe which the company claims is not in use. Moreover, all of the kills occurred during periods of low water, indicating that the company uses the pipe at regular intervals to bypass the treatment plant and lagoon, but only during low water does the pollutant kill fish.

Excessive amounts of ammonia in clarifier effluent of an anodizing plant killed about 800 fish. The industrial waste permit held by the firm specified use of sodium hydroxide for that purpose. Company was prosecuted and paid a fine.

Lack of dissolved oxygen caused by a large amount of fresh manure washed into the stream, together with a small amount of cattle dust known commercially as "Marlate #50", led to the death of 1,000 fish.

Agricultural drainage, which included herbicides and pesticides, caused the death of 5 million fish.

Chlorine and cleaning agents released into the stream from swimming pool when it was cleaned killed 200 to 300 fish, all of which were game fish.

Domestic sewage was overloading municipal sewage treatment plant. Flow was bypassed to the stream untreated, killing 11,000 fish. Enlargement of plant is currently in planning stage.

Ammonia tanks were washed out and liquid waste entered creek, killing 300 fish.

Cyanide entered the stream with the effluent from the municipal sewage treatment plant, killing 15,000 fish.

Large building containing fertilizer was washed out, and floor wash entered the stream. Some 13,900 fish died.

Deicer from manufacturing plant entered the stream through sewerage system, killing almost 600,000 fish. Value of fish lost estimated at $25,000.

About 10,600 fish died when caustic soda, used to neutralize the effluent from a metals plant, was permitted to escape into the creek.

Leak in a pipeline allowed the fuel oil to enter stream, killing almost 2,000 fish and other aquatic life.

Broken drain valve on an 800-gallon storage tank permitted approximately 300 gallons of gasoline to drain into the stream. About 2,000 fish were killed.

An 8-inch oil pipeline was ruptured by a bulldozer, causing a mile-long oil flow in the creek before the line was cut off. Some 17,400 fish and other animal life, including birds, muskrats, turtles, frogs, and water snakes were killed.

Chicken manure which was washed into the stream during cleaning operations at a poultry farm caused a depletion in oxygen, with the result that 4,000 fish died. The farm operator was prosecuted and fined.

Waste alcohol pumped from the bilge of a barge into the river to facilitate repairs, was responsible for the death of more than 1,000 fish. The company was prosecuted.

Chemical wastes, principally dieldrin, from aircraft maintenance entered the stream, killing 1,000 fish and a large number of eels.

Contents of a damaged underground oil tank which were dumped into the street flowed into the stream through a storm sewer. Some 300 fish died.

Hydrochloric acid, used to clean out a boiler, was poured into a drain that emptied into the river. Acid killed 5,000 fish.

Water was permitted to flow over a newly laid concrete fish ladder and retaining wall before the cement could set. As a result, about one mile of the stream was sterilized, killing all fish in this stretch of the stream.

Tannery released about 3 million gallons of wastes, mainly sulfides, from its lagoons into the stream, killing 20,000 fish.

Several gallons of a wood preservative which were spilled in a plant drained into the stream and killed 2,000 fish. Damages for the fish killed were recovered from the company involved.

Excessive quantity of copper sulphate from an algae control project entered three lakes, killing thousands of fish. Thirty to 40 percent of the fish were game fish.

Break in plant's cyanide rinse recirculation system permitted the chemical to enter the stream through floor drains. Some 20,000 fish died.

Drug manufacturing company released corn steep liquor into the stream, killing more than 10,000 fish and other aquatic life. Company was prosecuted and fined.

Heavy rains caused mine acid drainage to enter the river, resulting in the death of 7,000 fish.

High biochemical oxygen demand and oxygen depletion caused by untreated organic wastes discharged into lake resulted in the death of more than 26.5 million fish.

High biochemical oxygen demand from animal wastes and feeds which entered lake killed almost 26,000 fish.

Drainage from a feedlot and wastes from dairy farm polluted stream, causing the death of 350 fish.

Large quantity of insecticides and pesticides used by orchard owner entered stream, killing 3,000 fish. The owner had burned the container bags beside the stream.

1969 fish kill tables

Historical Summary. Table 1 presents a comparison of major fish-kill data since the reporting program began in 1960. These data more likely reflect improved reporting rather th[illegible]nounced upward trend in number and severity of the fish kills.

Sources of Pollution. Tables 2 and 3 summarize kills by sources of pollution and by operations subgroup. It will be seen that the industrial operations group is the largest reported cause of the kills, and the leading subgroup in this category for 1969 is chemical operations. Sewage was the most serious cause of fish deaths arising out of municipal operations and insecticides subgroup the most serious arising out of of agricultural operations.

Summary by States. The summary for the 45 reporting States is shown in table 4. Of the 465 notifications, 382 indicated the number of fish killed. The remaining 83 gave estimates of the losses in such general terms as "thousands," "many hundreds," and even "pounds." While these 83 kills of unspecified quantity are included in the cumulative listing, the numbers column is left blank.

Types of Water and Seasonal Incidence. Tables 5, 6, and 7 show the types of water in which the fish died, and the incidence of kills by month. About two-fifths of the kills were reported in the 3-month period July through September. However, the largest number of fish killed occurred in January in Florida's Lake Thonotosassa.

Severity of Kills. Tables 8, 9, 10, and 11 show the severity of the kills and their duration. Not shown in tabular form (but which can be seen in the itemized summaries) are the kinds of fish killed.

Cumulative Listings of Fish Kills. Tables 12 and 13 provide a cumulative listing of reports received, together with related data. Table 12 lists these kills caused by identifiable pollution sources. Table 13 is a compilation of kills in which pollution was suspected, but the source could not definitely be determined.

1—Historical summary of pollution-caused fish kills, June 1960—December 1969

June-December	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Number of States reporting	36	45	37	38	40	44	46	40	42	45
Number of reports	286	411	381	436	485	531	436	375	438	465
Reports which state number of fish killed	149	263	233	300	385	446	372	303	379	382
Total estimated number of fish killed*	6,379,000**	15,910,000**	7,118,000**	7,860,000	18,387,000	11,784,000	9,115,000	11,591,000	15,236,000	41,004,000
Average size of kill ***	2,925	6,535	5,710	7,775	5,490	4,310	5,620	6,460	6,015	5,860
Largest kill reported	5,000,000	5,387,000	3,180,000	2,000,000	7,887,000	3,000,000	1,000,000	6,549,000	4,029,000	26,527,000
Reports where extent of area affected was stated										
River:										
Number of reports	189	240	259	271	339	292	251	219	264	356
Miles of stream	1,204	1,686	1,448	2,203	1,440	1,300	989	1,039	1,565	2,358
Lakes and reservoirs:										
Number of reports	25	50	25	49	57	38	46	33	37	98
Acres affected	1,407	5,967	2,581	5,644	12,637	4,630	21,564	1,996	2,400	6,068
Average duration of kill in days	**2.95**	**2.64**	**2.59**	**3.18**	**2.44**	**2.57**	**2.71**	**3.34**	**2.99**	**3.11**

* Includes all fish killed reported plus an allowance computed for reports which do not indicate the number of fish that died.
** After adjustment for reports giving two or more causes.
*** Derived after excluding 12 reports of 100,000 kills or more as being unrepresentative.

Table 2—Fish kill summary by source of pollution, 1969

Source of pollution	Total reports	Reports specifying number of fish killed		Average kill*	Estimated fish killed**		
		Number of reports	Number of fish		Total	Game	Nongame
Agricultural operations	117	92	6,293,880	4,275	6,401,000	1,408,000	4,993,000
Industrial operations	199	166	28,680,182	6,375	28,891,000	9,736,000	19,155,000
Municipal operations	84	73	1,155,027	7,180	1,234,000	259,000	975,000
Transportation operations	32	28	2,057,030	6,440	2,083,000	692,000	1,391,000
Other operations	33	23	2,450,909	4,400	2,395,000	836,000	1,559,000
Total	465	382	40,637,028	5,860	41,004,000	12,931,000	28,073,000

* Derived after excluding 12 reports of 100,000 kills or more as being unrepresentative.
** Includes all fish killed as reported plus an allowance computed for reports which do not indicate the number of fish that died.
Note: Insufficient data available to make a reliable estimate of the number of fish of commercial value that died.

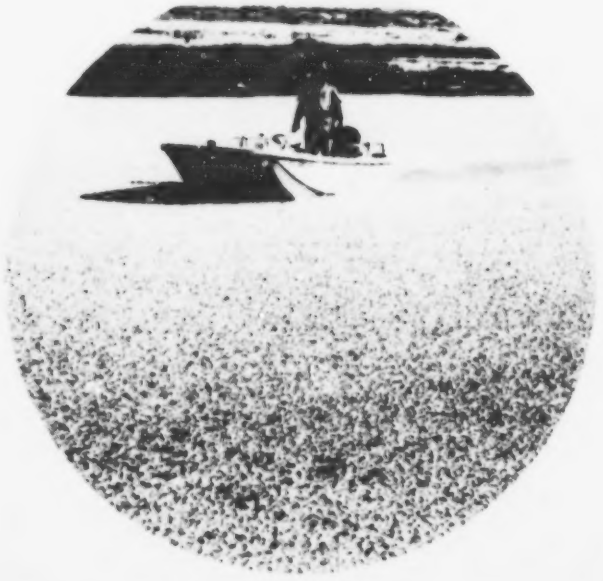


Table 3—Fish kill summary by source of pollution and type of activity, 1969

Source of Pollution	Total reports	Reports specifying number of fish killed	
		Number of reports	Number of fish
AGRICULTURAL			
Insecticides	80	60	5,982,877
Fertilizers	8	6	73,569
Manure-silage drainage	29	26	237,434
Subtotal	**117**	**92**	**6,293,880**
INDUSTRIAL			
Mining	18	11	537,506
Food products	37	32	26,711,089
Paper products	13	11	17,977
Chemicals	41	33	921,988
Petroleum	27	21	105,647
Metals	15	12	43,523
Combinations	9	9	28,757
Other	39	37	313,695
Subtotal	**199**	**166**	**28,680,182**
MUNICIPAL			
Sewerage systems	69	58	413,075
Refuse disposal	3	3	41,903
Water systems	5	5	2,603
Swimming pool	2	2	850
Power	5	5	696,596
Subtotal	**84**	**73**	**1,155,027**
TRANSPORTATION			
Rail	11	9	1,653,664
Truck	8	6	56,053
Barge or boat	3	3	1,520
Pipeline	10	10	345,793
Subtotal	**32**	**26**	**2,057,030**
OTHER OPERATIONS	33	23	2,450,909
Total	**465**	**382**	**40,637,028**

Table 4.—Pollution-caused fish kill summary by State, 1969

State	Total reports	Reports specifying number of fish killed		Extent of damage					
				River		Lake		Shore	
		Number of reports	Number of fish	Number of reports	Miles	Number of reports	Acres	Number of reports	Miles
Alabama	11	11	2,344,624	8	439	3	247	—	—
Alaska	4	4	25,250	3	16	—	—	1	2
Arizona	1	1	327,518	1	13	—	—	—	—
Arkansas	9	4	13,100	6	15	3	180	—	—
California	35	34	781,588	26	22	8	—	1	—
Colorado	1	—	—	1	—	—	—	—	—
Connecticut	12	5	6,920	7	3	4	6	1	—
Delaware	2	2	2,000	1	5	1	46	—	—
Florida	20	9	26,618,271	5	8	15	2,889	—	—
Georgia	18	6	10,640	3	8	15	91	—	—
Idaho	4	4	53,150	3	10	1	1,000	—	—
Illinois	6	6	72,053	6	21	—	—	—	—
Indiana	17	15	81,880	16	24	1	5	—	—
Iowa	3	3	44,500	3	16	—	—	—	—
Kansas	13	11	40,350	11	60	2	4	—	—
Kentucky	12	6	730,007	12	113	—	—	—	—
Louisiana	5	5	10,800	4	55	1	—	—	—
Maine	4	2	1,450	1	5	3	400	—	—
Massachusetts	8	7	30,100	3	7	4	69	1	4
Michigan	6	5	4,070	5	27	1	—	—	—
Minnesota	10	5	7,500	10	947	—	—	—	—
Missouri	20	16	309,390	16	38	4	451	—	—
Montana	4	1	2,000	4	10	—	—	—	—
Nebraska	1	—	—	1	13	—	—	—	—
New Hampshire	4	2	103	1	—	3	174	—	—
New Jersey	16	10	14,191	8	9	8	36	—	—
New Mexico	2	2	2,525	2	4	—	—	—	—
New York	21	20	141,630	20	50	—	—	1	100
North Carolina	1	1	500	1	3	—	—	—	—
Ohio	47	47	573,903	45	—	2	—	—	—
Oklahoma	3	2	800	3	12	—	—	—	—
Oregon	8	8	135,138	7	21	1	2	—	—
Pennsylvania	46	46	300,630	43	188	3	88	—	—
Rhode Island	2	2	2,650	1	1	1	30	—	—
South Carolina	2	2	13,000	2	11	—	—	—	—
South Dakota	1	1	5,000	1	2	—	—		
Tennessee	21	20	2,498,866	17	38	4	68	—	—
Texas	29	26	5,167,101	17	59	7	262	5	2
Utah	1	1	1,200	1	—	—	—	—	—
Vermont	4	3	25,150	4	23	—	—		
Virginia	4	4	25,894	3	7	—	—	1	5
Washington	11	10	104,356	9	18	2	—	—	—
West Virginia	6	6	100,700	6	18	—	—	—	—
Wisconsin	5	5	5,030	5	15	—	—	—	—
Wyoming	5	2	2,100	4	4	1	20	—	—
Total	**465**	**382**	**40,637,028**	**356**	**2,358**	**98**	**6,063**	**11**	**113**

Table 5.—Fish kill summary by type of water body, 1969

Type of water body	Total reports	Reports specifying number of fish killed		Extent of damage					
		Number of reports	Number of fish	River		Lake		Shore	
				Number of reports	Miles	Number of reports	Acres	Number of reports	Miles
River	356	310	10,611,530	356	2,358	—	—	—	—
Lake	98	64	30,007,993	—	—	98	6,068	—	—
Bay	11	8	17,505	—	—	—	—	11	113
Total	**465**	**382**	**40,637,028**	**356**	**2,358**	**98**	**6,068**	**11**	**113**

Table 6.—Fish kill summary by type of water, 1969

Type of water	Total reports	Reports specifying number of fish killed	
		Number of reports	Number of fish
Fresh	440	362	34,956,048
Salt	7	4	641,150
Estuary	18	16	5,039,830
Total	**465**	**382**	**40,637,028**

Table 7.—Fish kill summary by month, 1969

Month	Total reports	Reports specifying number of fish killed	
		Number of reports	Number of fish
January	15	11	26,660.879
February	9	6	14,789
March	18	13	142,862
April	42	34	2,543,611
May	52	45	236,283
June	63	54	549,969
July	64	51	6,914.320
August	66	56	720,894
September	60	47	999,466
October	33	29	1,610,840
November	20	16	117,320
December	9	7	36,520
Not stated	14	13	89,275
Total	**465**	**382**	**40,637,028**

Table 8.—Severity of fish kills by duration, 1969

Days	All reports*	Complete kill	Heavy kill	Moderate kill	Light kill	Not stated
Less than 1	29	4	9	8	7	1
1	85	13	27	21	20	4
2	68	11	23	16	18	0
3	34	4	13	8	8	1
4	13	4	8	1	0	0
5	11	3	5	1	1	1
6	4	2	1	1	0	0
7	5	1	1	2	1	0
8	2	1	1	0	0	0
9	1	0	1	0	0	0
10	1	1	0	0	0	0
13	1	1	0	0	0	0
14	3	1	1	0	1	0
18	2	0	1	1	0	0
20	2	0	0	2	0	0
24	2	1	1	0	0	0
25	1	1	0	0	0	0
28	1	0	1	0	0	0
30	2	0	1	1	0	0
150	1	1	0	0	0	0
Total	**268**	**49**	**94**	**62**	**56**	**7**
Average	**3.11**	**4.02**	**3.37**	**3.19**	**1.95**	**1.79**

* Includes only reports which indicated duration of kill.

Table 9.—Fish kill summary by severity of kill, 1969

Severity of kill	Total reports	Reports specifying number of fish killed		Estimated number of fish killed*	Average kill**
		Number of reports	Number of fish		
Complete kill	61	51	1,664,221	1,779,000	11,430
Heavy kill	121	105	35,711,143	35,757,000	9,305
Moderate kill	87	68	371,065	475,000	5,455
Light kill	87	68	53,612	69,000	790
Not stated	109	90	2,836,987	2,924,000	4,585
Total	**465**	**382**	**40,637,028**	**41,004,000**	**5,860**

* Includes all fish killed as reported plus an allowance computed for reports which did not indicate the number of fish that died.
** Derived after excluding 12 reports of 100,000 kills or more as being unrepresentative.

Table 10.—Severity of fish kills by source of pollution, 1969

Source of pollution	All reports	Complete kill	Heavy kill	Moderate kill	Light kill	Not stated
	Number					
Agricultural operations	117	13	28	17	20	39
Industrial operations	199	29	52	45	36	37
Municipal operations	84	7	28	12	16	21
Transportation operations	32	9	3	5	6	9
Other operations	33	3	10	8	9	3
Total	**465**	**61**	**121**	**87**	**87**	**109**
	Percent					
Agricultural operations	100.0	11.1	23.9	14.5	17.1	33.3
Industrial operations	100.0	14.6	26.1	22.6	18.1	18.6
Municipal operations	100.0	8.3	33.3	14.3	19.0	25.0
Transportation operations	100.0	28.1	9.4	15.6	18.8	28.1
Other operations	100.0	9.1	30.3	24.2	27.3	9.1
Total	**100.0**	**13.1**	**26.0**	**18.7**	**18.7**	**23.4**

Table 11.—Pollution source of fish kills by duration, 1969

Days	All reports*	Agricultural operations	Industrial operations	Municipal operations	Transportation operations	Other operations
Less than 1	29	4	16	4	0	5
1	85	15	42	15	5	8
2	68	14	33	10	6	5
3	34	9	12	10	3	0
4	13	1	9	0	1	2
5	11	4	4	1	1	1
6	4	0	1	0	2	1
7	5	2	1	0	0	2
8	2	0	1	1	0	0
9	1	0	1	0	0	0
10	1	0	1	0	0	0
13	1	0	1	0	0	0
14	3	2	1	0	0	0
18	2	0	1	1	0	0
20	2	0	2	0	0	0
24	2	0	1	1	0	0
25	1	0	1	0	0	0
28	1	0	0	1	0	0
30	2	1	1	0	0	0
150	1	0	0	1	0	0
Total	**268**	**52**	**129**	**45**	**18**	**24**
Average	**3.11**	**3.23**	**3.19**	**3.41**	**2.61**	**2.21**

* Includes only reports which indicated duration of kills.

Report of fish kills, 1969—Cause identifiable

Table 12

State	River or lake	City or town	Date	Cause 1/ see code page 13	Type of fish killed: Percent game	Type of fish killed: Percent nongame	Percent kill with commercial value	Estimated fish killed	Severity 2/ see code page 13	Estimated miles or acres affected	Days	Hours
ALABAMA	LAKE MARTIN	ALEXANDER CITY	9 12 69	28	57%	43%	-	72,000	3	2250	1	-
	LOCUST FK-WARRIOR	BIRMINGPORT	10 07 69	11	100%	-	-	751,000	2	5M	5	-
	CAHABA RIVER	CENTREVILLE	10 01 69	24	2%	98%	79%	9,915	2	6M	-	-
	CHICKASAW CREEK	CHICKASAW	6 25 69	23	78%	22%	-	4,240	2	1M	1	-
	DEMOPOLIS RES	DEMOPOLIS	7 11 69	28	15%	85%	85%	1,256	3	20A	2	-
	MUD CREEK	FACKLER	7 17 69	41	-	-	-	1,500,000	-	419A	5	-
	DEMOPOLIS RES	GREENSBORO	6 17 69	31	99%	1%	1%	472	2	2A	1	-
	BASSETT CREEK	JACKSON	5 09 69	23	40%	60%	60%	200	3	1M	-	-
	TOMBIGBEE RIVER	MCINTOSH	9 13 69	24	36%	64%	-	500	4	-	-	-
	MOBILE RIVER	MOBILE	7 10 69	23	-	100%	100%	26	4	6M	1	-
	BLACK WARRIOR R	TUSCALOOSA	8 04 69	27	61%	39%	38%	5,000	3	1M	-	12
ALASKA	SWANSON RIVER	SOLDOTNA-KENAI	8 12 69	28	95%	5%	-	9,000	1	8M	3	-
	SWANSON RIVER	KENAI	8 - 69	50	100%	-	-	10,000	2	5M	5	-
	BELKOFSKI BAY STR	KING COVE	8 - 69	28	-	-	100%	6,000	2	3M	30	-
	SILVER BAY	SITKA	12 27 69	23	-	-	-	250	4	2A	1	-
ARIZONA	SAN FRANSC-GILA R	CLIFTON	6 29 69	21	3%	97%	-	327,518	1	13M	1	-
ARKANSAS	OSAGE CREEK	BERRYVILLE	6 20 69	31	75%	25%	-	300	3	3M	3	-
	WOLFE CREEK	DELIGHT	11 05 69	50	-	-	-	400	2	2M	7	-
	HOLLEY CREEK	DIERKS	4 13 69	24	75%	25%	-	-	4	-	1	-
	CACHE RIVER	GRUBBS	10 07 69	11	-	100%	-	12,000	2	7M	3	-
	CROOKED CREEK	HARRISON	5 19 69	31	-	-	-	-	-	-	-	-
	LAKE CHICOT	LAKE VILLAGE	8 20 69	11	-	-	-	-	-	-	-	-
	FOUCHE CREEK	LITTLE ROCK	6 23 69	11	50%	50%	-	400	4	3M	1	-
	LAKE WILSON	PORTLAND	1 22 69	11	2%	98%	-	-	4	30A	3	-
	LAKE ENTERPRISE	WILMOT	1 01 69	11	5%	95%	-	-	3	150A	30	-
CALIFORNIA	SACRAMENTO RIVER	KESWICK	1 - 69	35	100%	-	-	1,620	-	-	-	-
	LAKE CHABOT	ALAMEDA COUNTY	6 12 69	28	100%	-	-	12	-	-	-	-
	SAN FRANCISCO BAY	ALAMEDA	6 03 69	11	40%	60%	-	5	-	-	-	-
	OLNEY CREEK	ANDERSON	7 23 69	11	-	100%	-	55	-	-	-	-
	TOM PAYNE SLOUGH	BANTA	- - 69	11	98%	2%	-	1,375	-	-	-	-
	NEWELL CREEK	BEN LOMOND	10 03 69	28	100%	-	-	750	-	-	-	-
	AQUATIC PARK LGN	BERKELEY	9 12 69	31	58%	42%	-	4,725	-	-	-	-
	PINE CREEK	CHICO	- - 69	11	33%	67%	-	3,000	-	-	-	-
	LAKE LAFAYETTE	CONTRA COSTA CO	7 24 69	11	100%	-	-	1,000	-	-	-	-
	BEAN CREEK	FELTON	10 06 69	28	100%	-	-	6,000	-	-	-	-
	CAPAY CREEK	GLENN COUNTY	- - 69	11	5%	95%	-	17,750	-	-	-	-
	INDIAN CREEK	HAPPY CAMP	9 09 69	21	33%	67%	-	30,000	1	6M	1	-
	MILL CREEK	HUMBOLDT COUNTY	1 - 69	11	-	100%	-	46	-	-	-	-
	VAIL CANAL	IMPERIAL COUNTY	11 09 69	11	-	100%	-	25	-	-	-	-
	LEMOORE SPORT PD	KINGS COUNTY	- - 69	11	100%	-	-	4,050	-	-	-	-
	LARKSPUR-MARINA L	MARIN COUNTY	8 21 69	31	100%	-	-	25	-	-	-	-
	TUOLUMNE RIVER	MODESTO	- - 69	31	45%	55%	-	55,000	-	-	-	-
	SALT CREEK	SE OF RED BLUFF	7 21 69	11	48%	52%	-	525	-	-	-	-
	SACRAMENTO RIVER	REDDING	1 14 69	21	96%	4%	-	-	-	16M	4	-
	IRRIGATION CANAL	RIO VISTA	- - 69	12	100%	-	-	25	-	-	-	-
	DUCK CREEK	SAN JOAQUIN CO	- - 69	11	20%	80%	-	1,250	-	-	-	-
	DITCH	SAN JOAQUIN CO	- - 69	13	1%	99%	-	500	-	-	-	-
	VICTORIA IS-OLD R	SAN JOAQUIN CO	7 21 69	11	2%	98%	-	1,025	-	-	-	-
	DIVERTING CANAL	SAN JOAQUIN CO	- - 69	24	23%	77%	-	325	-	-	-	-
	ALAMITOS CREEK	SAN JOSE	10 27 69	34	9%	91%	-	550	-	-	-	-
	SAN LUIS OBISPO C	SAN LUIS OBISPO	11 09 69	31	17%	83%	-	600	-	-	-	-
	SAN LUIS OBISPO C	SAN LUIS OBISPO	11 07 69	42	43%	57%	-	1,750	-	-	-	-
	SAN LUIS OBISPO C	SAN LUIS OBP CO	11 12 69	24	33%	67%	-	3,000	-	-	-	-
	OLNEY CREEK	SHASTA COUNTY	8 - 69	11	100%	-	-	200	-	-	-	-
	INDIAN CREEK	SHINGLE SPRINGS	- - 69	11	50%	50%	-	500	-	-	-	-
	DWINNELL RES	SISKIYOU COUNTY	10 06 69	35	3%	97%	-	637,900	-	-	-	-
	CREEK	SOLANO COUNTY	- - 69	11	-	100%	-	10,000	-	-	-	-
	HORSE CREEK	SOLANO COUNTY	- - 69	11	-	100%	-	1,500	-	-	-	-
	POND-SEAR PT BRDG	SOLANO COUNTY	9 01 69	24	100%	-	-	2,500	-	-	-	-
	KAWEAH RIVER	TULARE COUNTY	- - 69	11	100%	-	-	1,000	-	-	-	-
COLORADO	CHIEF CREEK	WRAY	7 21 69	11	100%	-	-	-	2	-	-	-
CONNECTICUT	TRIB TO HOXIE BK	FRANKLIN	8 11 69	13	90%	10%	-	100	3	-	-	-
	BERWALD POND	BETHANY	5 02 69	11	-	100%	-	-	3	1A	-	-
	SCALZO POND	BROOKFIELD	7 03 69	31	-	100%	-	-	-	2A	3	-
	WRIGHTS POND	ENFIELD	5 22 69	24	-	100%	-	-	4	-	-	-
	FLAT BK-BLKLDGE R	MARLBOROUGH	4 30 69	11	90%	10%	-	800	1	3M	1	-
	HOUSATONIC RIVER	MILFORD	10 07 69	26	-	-	-	-	3	-	-	-
	NEW HAVEN HARBOR	NEW HAVEN	9 08 69	26	-	100%	-	-	3	-	-	-

	QUINNIPIAC RIVER	NEW HAVEN	8 18 69	25	-	-	100%	3,000	-	-	-	-
	NORTHFIELD IMP	NORTHFIELD	5 04 69	24	20%	80%	-	-	3	3A	-	-
	YANTIC RIVER	NORWICH	9 04 69	28	1%	99%	100%	3,000	3	-	-	3
	FOLLY BROOK	WETHERSFIELD	4 18 69	31	-	100%	-	-	4	-	-	-
	MAD RIVER	WINSTED	6 05 69	25	100%	-	-	20	4	-	3	-
DELAWARE	LITTLE RIVER	LITTLE CREEK	6 14 69	27	50%	50%	25%	1,000	2	5M	1	-
	SILVER LAKE	REHOBOTH BEACH	6 18 69	31	100%	-	-	1,000	3	46A	-	-
FLORIDA	EVANS LAKE	DADE CITY	12 25 69	22	100%	-	-	1,000	3	50A	1	-
	WITHLACOOCHEE RIV	DADE CITY	6 05 69	22	100%	- %	-	-	3	-	1	-
	LAKE REEDY	FROSTPROOF	4 28 69	28	30%	70%	-	-	4	-	-	-
	LAKE REEDY	FROSTPROOF	12 13 69	11	97%	3%	-	-	4	2A	2	-
	LAKE CLARKE	LAKE CLARKE	4 15 69	50	30%	70%	-	4,960	2	10A	4	-
	BELLCTOS CANAL	LAKELAND	4 04 69	31	-	-	-	-	3	-	3	-
	CARPENTERS HM LK	LAKELAND	6 03 69	12	100%	-	-	-	3	100A	5	-
	LAKE CLAY	LAKE PLACID	3 20 69	11	100%	-	-	-	4	347A	14	-
	LAKE SEMINOLE	LARGO	5 07 69	31	5%	95%	-	-	4	-	2	-
	LAKE BROOKER	LUTZ	10 25 69	13	6%	94%	-	25,569	3	40A	7	-
	HORSEY PARK LAKE	NEW PORT RICHEY	4 21 69	31	100%	0%	-	18,000	3	2A	2	-
	LAKE THONOTOSASSA	PLANT CITY	1 27 69	22	2%	98%	-	26,526,690	2	810A	9	-
	ELKCAM CANAL	PORT CHARLOTTE	2 - 69	50	- %	100%	-	-	3	2A	2	-
	SUGAR BOWL CREEK	SARASOTA	2 - 69	50	40%	60%	-	-	1	4M	4	-
	TWIN LAKE	TAMPA	9 14 69	31	-	100%	-	-	4	65A	2	-
	INDIAN RIVER	VERO BEACH	5 16 69	11	50%	50%	-	8,000	1	2M	2	-
	LAKE MIRROR	WINTER HAVEN	3 16 69	11	9%	91%	-	320	3	1A	2	-
	LAKE ROY	WINTER HAVEN	4 21 69	11	65%	35%	-	1,067	4	-	-	-
	LAKE ELOISE	WINTER HAVEN	8 31 69	31	1%	99%	-	-	4	1160A	3	-
	LAKE SHIPP	WINTER HAVEN	10 24 69	22	1%	99%	-	32,665	3	283A	18	-
GEORGIA	PRIVATE LAKES	ABBEVILLE	9 - 69	13	-	-	-	-	-	3A	-	-
	PRIVATE LAKE	CAIRO	9 - 69	11	-	-	-	-	-	7A	-	-
	FARM POND	CAIRO	6 04 69	11	60%	40%	-	6,500	1	5A	7	-
	PRIVATE POND	CANTON	10 - 69	11	-	-	-	-	1	4A	-	-
	PRIVATE LAKE	COCHRAN	8 - 69	11	100%	-	-	-	-	5A	-	-
	POND	COLLINS	8 18 69	11	100%	-	-	30	-	-	-	-
	GUM CREEK	CORDELE	11 04 69	31	95%	5%	1%	1,500	2	3M	3	-
	GUM CREEK	CORDELE	11 04 69	31	95%	5%	1%	1,500	2	3M	3	-
	PRIVATE POND	DALLAS	10 - 69	11	-	-	-	-	1	4A	-	-
	PRIVATE LAKE	DAVISBORO	8 - 69	11	50%	50%	-	-	-	30A	-	-
	PRIVATE LAKE	GRADY COUNTY	9 - 69	11	-	-	-	-	-	5A	-	-
	PRIVATE POND	KATHLEEN	9 - 69	11	-	-	-	-	-	10A	-	-
	PRIVATE LAKE	LOUISVILLE	8 - 69	11	100%	-	-	10	4	2A	-	-
	LITTLE CREEK	LYONS	7 11 69	42	67%	33%	-	-	2	2M	-	-
	LAKE IN BIBB CO	MACON	5 10 69	11	100%	-	-	500	2	5A	2	-
	PRIVATE LAKE	MORGAN	9 - 69	11	-	-	-	-	-	-	-	-
	PRIVATE POND	PERRY	9 - 69	11	-	-	-	-	-	3A	-	-
	PRIVATE LAKE	TIGNALL	7 - 69	28	-	-	-	-	-	9A	-	-
IDAHO	OXBOW RES-SNAKE R	HOMESTEAD,OR	4 03 69	35	100%	-	-	52,500	2	1000A	28	-
	BIG WOOD RIVER	HAILEY	12 29 69	34	100%	-	-	300	3	-	1	-
	SNAKE RIVER	LEWISVILLE	4 08 69	22	5%	95%	100%	350	1	10M	6	-
	ROCK CREEK	TWIN FALLS	7 10 69	24	15%	85%	-	200	3	-	-	-
ILLINOIS	CEDAR CREEK	CEDARVILLE	5 03 69	12	1%	99%	5%	31,384	1	4M	-	20
	SNAKE CREEK	PARIS	5 08 69	11	5%	95%	1%	5,963	3	3M	2	-
	SUGAR CREEK	PARIS	9 01 69	31	38%	62%	-	5,005	1	2M	-	-
	PRINCE RUN CREEK	PRINCEVILLE	8 15 69	22	6%	94%	0%	14,409	4	3M	1	-
	MACOUPIN CREEK	STANDARD CITY	8 23 69	21	41%	59%	13%	4,388	3	6M	3	-
	W BR SALT FORK	URBANA	8 27 69	22	41%	59%	23%	17,964	2	3M	4	-
INDIANA	POLYWOG CREEK	NEW LANCASTER	9 05 69	22	13%	87%	-	900	3	-	-	-
	INDIAN CREEK	CORYDON	9 18 69	31	14%	86%	-	2,430	2	1M	-	-
	EDWARDS CREEK	DANVILLE	4 25 69	12	1%	99%	-	300	3	1M	-	-
	SUGAR CREEK	DARLINGTON	5 03 69	12	-	100%	-	700	4	2M	-	-
	ROBINSON DITCH	FORT WAYNE	5 05 69	25	28%	72%	-	100	3	-	-	-
	MONON DITCH	FRANCESVILLE	6 05 69	12	50%	50%	-	-	4	5M	-	-
	YOUNGS CREEK	FRANKLIN	6 13 69	31	5%	95%	-	1,600	2	1M	-	-
	QUEEN-3 LAKE	JASONVILLE	1 29 69	41	100%	-	-	2,000	2	5A	-	-
	DEER CREEK	LINCOLN	9 13 69	12	31%	69%	-	13,900	2	4M	-	-
	GRASSY CREEK	NEW WHITELAND	8 19 69	31	6%	94%	-	36,200	2	2M	-	-
	GOVERNMENT DITCH	ONWARD	1 23 69	50	-	100%	-	-	2	5M	1	-
	PAW PAW CREEK	ROAN	7 25 69	13	23%	77%	-	80	4	3M	-	-
	LTL & BIG BLUE R	SHELBYVILLE	6 09 69	28	-	-	-	200	3	-	-	-

[1] CODES (CAUSE): (10) **Agricultural Operations**, (11) Poisons (Herbicides, Pesticides, etc.), (12) Fertilizers, (13) Manure, Silo, Feedlot Drainage, etc.; (20) **Industrial Operations**, (21) Mining, (22) Food & Kindred Products, (23) Paper & Allied Products, (24) Chemicals, (25) Petroleum, (26) Metals, (27) Combinations, (28) Other; (30) **Municipal Operations**, (31) Sewerage System, (32) Refuse Disposal, (33) Water System, (34) Swimming Pool, (35) Power; (40) **Transportation Operations**, (41) Rail, (42) Truck, (43) Barge or Boat, (44) Pipe Line; (50) **Other Operations**, (90) Unknown (See table, page 18). [2] CODES: (1) Complete; (2) Heavy; (3) Moderate; (4) Light.

Report of fish kills, 1969—Cause identifiable

	River or lake	City or town	Date	Cause 1/ see code page 13	Type of fish killed: Percent game	Type of fish killed: Percent nongame	Percent kill with commercial value	Estimated fish killed	Severity 2/ see code page 13	Estimated miles or acres affected	Days	Hours
	LITTLE CICERO CR	SHERIDAN	4 02 69	31	7%	93%	-	15,000	2	-	2	-
	RIPLEY CREEK	SUNMAN	5 07 69	31	27%	73%	-	3,500	2	-	-	-
	LAUGHERY CREEK	VERSAILLES	9 04 69	31	25%	75%	-	1,300	-	-	-	-
	WALNUT CREEK	WARSAW	8 27 69	31	-	100%	-	800	2	-	-	-
IOWA	BOUTON-SMALL CR	BOUTON	9 18 69	50	-	100%	-	500	1	1M	-	-
	SO FK CATFISH CR	DUBUQUE	5 15 69	27	25%	75%	-	7,000	1	7M	-	-
	POWELL CREEK	STORM LAKE	10 22 69	32	-	100%	-	37,000	2	8M	-	-
KANSAS	FOUR MILE CREEK	AUGUSTA	8 17 69	13	25%	75%	40%	5,000	3	2M	1	-
	SPRING RIVER	BAXTER SPRINGS	3 25 69	21	-	-	-	-	3	10M	20	-
	CHASE CO STATE LK	COTTONWD FALLS	5 02 69	11	95%	5%	95%	1,200	4	38A	2	-
	ARKANSAS RIVER	DODGE CITY	4 - 69	13	-	-	-	-	3	20M	-	-
	SUTTON CREEK	EL DORADO	8 20 69	25	25%	75%	50%	2,000	3	2M	3	-
	TRIB SPRING RIVER	GALENA	5 16 69	24	95%	5%	35%	1,000	2	-	1	-
	DRY WALNUT CREEK	GREAT BEND	1 01 69	28	10%	90%	10%	200	4	-	2	-
	SAND CREEK	NEWTON	3 16 69	41	10%	90%	30%	3,000	4	7M	2	-
	LABETTE CREEK	PARSONS	9 24 69	13	30%	70%	25%	5,000	2	6M	2	-
	ROCK CREEK	POTWIN	1 16 69	44	50%	50%	33%	2,500	3	1M	6	-
	MARSHALL FARM PD	ROSALIA	9 02 69	11	100%	-	10%	100	2	1A	5	-
	PETERS CREEK	TROY	4 29 69	31	2%	98%	5%	350	4	8M	3	-
	COW CREEK	WEIR	9 06 69	21	50%	50%	40%	20,000	1	4M	4	-
KENTUCKY	TENNESSEE RIVER	CALVERT CITY	7 19 69	28	15%	85%	45%	5,000	2	4M	1	-
	DRAKES CREEK	FRANKLIN	9 11 69	24	-	-	-	599,453	1	30M	8	-
	BEAVER CREEK	GLASGOW	7 24 69	25	-	-	-	-	1	2M	1	-
	BEAVER CREEK	GLASGOW	7 08 69	25	-	-	-	-	1	2M	1	-
	CRANKS C-MARTIN F	HARLAN	8 22 69	21	-	-	-	-	1	16M	25	-
	CLOVER FORK CREEK	HARLAN	7 02 69	27	66%	34%	34%	2,384	1	4M	-	-
	CUMBERLAND RIVER	HARLAN	9 26 69	41	-	-	-	-	3	4M	-	-
	CUMBERLAND RIVER	HARLAN	8 09 69	41	-	-	-	-	3	4M	-	-
	SALT RIVER	HARRODSBURG	5 31 69	31	60%	40%	20%	64,486	2	4M	2	-
	BIG GOOSE CREEK	MANCHESTER	11 02 69	21	-	-	-	-	2	17M	5	-
	STEVENS CREEK	OWENTON	7 24 69	22	75%	25%	25%	29,441	1	11M	5	-
	HANGING FORK CR	STANFORD	5 28 69	41	50%	50%	25%	29,243	1	15M	6	-
LOUISIANA	CHATLIN CANAL	BUNKIE	11 15 69	22	20%	80%	30%	2,000	2	-	2	-
	PONCHATOULA CREEK	HAMMOND	12 12 69	31	10%	90%	20%	800	2	-	1	-
	VERMILLION RIVER	LAFAYETTE	11 15 69	31	10%	90%	20%	3,000	2	30M	2	-
	BAYOU TECHE	NEW IBERIA	10 25 69	22	10%	90%	20%	2,500	1	25M	2	-
	LAKE DAUTRIEVE	ST MARTINVILLE	7 10 69	11	25%	75%	40%	2,500	2	-	2	-
MAINE	HORSESHOE POND	CHERRYFIELD	6 19 69	11	100%	-	-	1,350	1	11A	2	-
	SCHOODIC LAKE	CHERRYFIELD	- - 69	11	-	100%	-	-	4	389A	5	-
	LAMBERT LAKE	LAMBERT LAKE	7 04 69	11	-	100%	-	-	4	-	-	-
	SALMON STREAM	WASHBURN	7 27 69	11	100%	-	-	100	3	5M	3	-
MASSACHUSETTS	GREEN POND	FALMOUTH	9 04 69	11	-	100%	-	8,000	2	14A	-	12
	N FALMOUTH SHRLNE	FALMOUTH	9 16 69	25	-	-	-	-	2	4M	3	-
	HAGAR POND	MARLBORO	6 14 69	31	-	100%	-	-	2	4M	3	-
	DEERFIELD RIVER	MONROE	7 04 69	23	50%	50%	-	5,500	3	30A	2	-
	CHARLES RIVER	NEWTON	7 19 69	42	10%	90%	-	1,000	2	3M	1	-
	WINNECUNNET POND	NORTON	9 01 69	11	30%	70%	-	10,000	2	6M	2	-
	BARTLETT POND	PLYMOUTH	8 02 69	11	30%	70%	-	2,500	2	10A	3	-
	CONNECTICUT RIVER	W SPRINGFIELD	2 20 69	26	-	100%	-	3,000	2	15A	3	-
								100	4	-	1	-
MICHIGAN	SILVER LEAD CREEK	K I SAWYER AFB	5 03 69	50	100%	-	-	-	4	2M	-	-
	BATTLE CREEK RIV	BATTLE CREEK	3 18 69	22	40%	60%	-	380	4	1M	-	-
	AUSABLE RIVER	GRAYLING	7 09 69	33	70%	30%	-	55	4	1M	-	1
	GRAND RIVER	LANSING	9 02 69	31	65%	35%	-	2,500	2	3M	1	-
	TITTABAWASSEE R	MIDLAND	9 14 69	24	5%	95%	-	1,000	2	20M	-	-
	PD 2-WALLED LK DR	NORTHVILLE	11 13 69	28	5%	95%	-	135	4	-	2	-
MINNESOTA	ST LOUIS RIVER	CLOQUET	8 21 69	23	10%	90%	-	-	2	15M	14	-
	ST LOUIS RIVER	CLOQUET	7 25 69	23	25%	75%	-	-	3	-	-	-
	AMBE HAL BUD LKS	FAIRMONT	7 17 69	11	40%	60%	-	5,000	2	900A	-	-
	BUFFALO CREEK	GLENCOE	9 02 69	22	25%	75%	-	2,000	3	8M	2	-
	BUFFALO CREEK	GLENCOE	8 22 69	22	25%	75%	-	200	4	2M	2	-
	WHITEWATER RIVER	ST CHARLES	5 22 69	22	100%	-	-	100	3	8M	2	-
	NO SLEEPY EYE CR	SLEEPY EYE	8 18 69	22	-	100%	-	-	3	2M	-	-

	SO FORK ZUMBRO R	VERNON	9 04 69	22	-	100%	-	-	2	3M	2	-
	LE SUEUR RIVER	WASECA	8 18 69	22	5%	95%	-	200	4	3M	2	-
	LE SUEUR RIVER	WASECA	11 05 69	22	-	100%	-	-	4	6M	-	-
MISSOURI	PERCHE CREEK	EASLEY	7 22 69	53	88%	12%	-	170	3	2M	2	-
	E FK BIG CREEK	BETHANY	6 07 69	31	-	-	-	-	1	3M	1	-
	BUCKS R-E F BIG C	BETHANY	7 17 69	22	-	-	-	-	1	1M	1	-
	BIG CREEK	BLAIRSTOWN	10 29 69	44	2%	98%	-	100	4	1M	1	-
	ELKHORN CREEK	BUELL	8 09 69	28	5%	95%	-	50	2	1M	1	-
	LYNN BRANCH	GREENFIELD	8 17 69	13	20%	80%	-	500	3	1M	2	-
	LAKE OF THE OZARK	LAKE OZARK	6 24 69	43	100%	-	-	130	4	10A	3	-
	PARK BRANCH	LAMAR	6 03 69	26	-	-	-	-	2	1M	4	-
	HORSE CREEK	LOCKWOOD	7 13 69	31	20%	80%	-	100	3	3M	3	-
	BUFFALO CREEK	LOUISIANA	10 06 69	24	25%	75%	-	300	3	1M	1	-
	BUFFALO CREEK	LOUISIANA	7 16 69	24	-	-	-	2,000	3	-	7	-
	102 RIVER	MARYVILLE	9 30 69	31	55%	45%	-	850	1	7M	2	-
	SO FK SALT RIVER	MEXICO	6 16 69	28	10%	90%	-	500	4	1M	2	-
	FINLEY RIVER	OZARK	6 13 69	22	22%	78%	-	42,500	2	5M	1	-
	LAKE WAPPAPELLO	POPLAR BLUFF	4 18 69	11	36%	64%	-	-	2	40A	-	-
	WIDOT C & WELDON	PRINCETON	11 23 69	41	-	-	-	36,000	1	3M	1	-
	CONNS CREEK	RICHLAND	10 20 69	44	1%	99%	-	5,000	1	5M	1	-
	LEWIS & CLARK LK	RUSHVILLE	7 14 69	13	10%	90%	-	150,000	2	400A	2	-
	HANNEKEN FARM PD	UNION	6 10 69	11	100%	-	-	70	4	1A	1	-
	E FK TERO CREEK	WINDSOR	8 17 69	21	60%	40%	-	3,150	3	3M	2	-
MONTANA	PRICKLY PEAR CR	EAST HELENA	6 11 69	21	100%	-	-	-	3	1M	2	-
	WHITEFISH RIVER	KALISPELL	11 07 69	50	50%	50%	-	-	4	3M	2	-
	SO FK MUSSELSHELL	MARTINSDALE	8 27 69	11	50%	50%	-	-	2	2M	1	-
	SIXTEENMILE CREEK	RINGLING	5 24 69	11	20%	80%	-	2,500	1	4A	-	-
NEBRASKA	BONE CREEK	AINSWORTH	2 26 69	13	-	100%	-	-	2	13M	-	-
NEW HAMPSHIRE	VILAS POOL	ALSTEAD	7 02 69	27	82%	18%	-	75	4	4A	2	-
	BEAVER BROOK	DERRY	4 16 69	50	-	-	-	-	-	-	-	-
	CONWAY LAKE	RAYMOND	6 08 69	50	95%	5%	-	-	4	150A	7	-
	GRASSY POND	RINDGE	4 25 69	50	100%	-	-	30	4	20A	-	-
NEW JERSEY	PEQUEST RIVER	WARREN-LONG BDG	5 30 69	24	-	100%	-	100	4	-	-	-
	ALBERTSONS BROOK	ANCORA	4 28 69	31	-	100%	-	100	3	2M	1	-
	BALLINGERS MILL P	ALDINE	7 12 69	11	40%	60%	-	200	1	15A	14	-
	CARNEYS PT BASIN	CARNEYS POINT	9 28 69	42	-	100%	-	-	1	1M	-	-
	JACKSON BROOK	DOVER	4 29 69	50	-	100%	-	200	2	1M	-	10
	ROCKAWAY RIVER	DOVER	5 18 69	28	20%	80%	-	2,000	3	2M	1	-
	SQUARE CIRCLE PD	GIBBSBORO	7 30 69	24	-	100%	-	-	3	3A	1	-
	BERGEN CO-PK POND	GLEN ROCK	7 04 69	31	-	100%	-	-	2	-	-	-
	BIRCHWOOD LAKE	MEDFORD	5 27 69	31	40%	60%	-	-	2	14A	18	-
	ROOSEVELT PK POND	METUCHEN	4 14 69	50	-	100%	-	-	4	-	-	-
	VICTOR CROWELL PD	MIDDLESEX	10 10 69	24	30%	70%	-	11,166	2	2A	2	-
	MANTUA CREEK	PAULSBORO	11 17 69	24	-	100%	-	-	2	1M	-	-
	MULLIHANS POND	SADDLE RIVER	7 14 69	50	-	100%	-	100	4	1A	-	6
	SAND BROOK	SAND BROOK	5 26 69	50	70%	30%	-	200	3	1M	1	-
	SCHOLLEYS MTN BR	SCHOLLEYS MTN	4 28 69	50	78%	22%	-	50	3	1M	1	-
	ROBINSONS BRANCH	SCOTCH PLAINS	7 30 69	50	-	100%	-	75	3	1M	-	8
NEW MEXICO	RUIDOSO RIVER	RUIDOSO	2 - 69	28	100%	-	-	2,150	3	3M	4	-
	RUIDOSO RIVER	RUIDOSO	4 12 69	28	80%	20%	-	375	4	1M	-	5
NEW YORK	HOOSIC RIVER	POWNAL,VT	8 19 69	29	1%	88%	-	10,000	2	5M	2	-
	N BR SANDY CREEK	ADAMS	10 10 69	22	1%	99%	-	5,000	3	-	-	-
	BEAVER MEADOW BR	AKRON	2 17 69	27	1%	99%	-	2,000	1	1M	-	-
	SECOND CREEK	ALTON	7 19 69	22	-	100%	-	100	-	1M	1	-
	GENESEE RIVER	AVON	9 16 69	31	-	100%	-	7,500	2	-	-	-
	COLLINS BROOK	BURKE	7 25 69	13	3%	97%	-	4,000	2	-	3	-
	GOT CREEK	CLARENCE CENTER	9 09 69	23	1%	99%	-	10,000	2	5M	2	-
	CANADAWAY CREEK	FREDONIA	8 16 69	31	-	100%	-	10,000	2	2M	3	-
	JOHNSONS CREEK	LYNDONVILLE	5 02 69	24	-	100%	-	5,000	1	2M	-	-
	BARGE CANAL	NEWARK	9 31 69	22	2%	98%	-	3,000	2	3M	-	-
	JAMAICA BAY	NEW YORK CITY	9 10 69	31	-	100%	-	2,000	3	100A	1	-
	CHENANGO RIVER	NORWICH	6 16 69	27	1%	99%	-	10,000	2	4M	3	-
	ALLEGHENEY RIVER	OLEAN	10 07 69	24	10%	90%	-	10,000	2	4M	24	-
	HASKELL CREEK	OLEAN	7 02 69	11	3%	97%	-	20,000	2	10M	4	-
	BEAR CREEK	ONTARIO	6 06 69	11	1%	99%	-	10,000	2	1M	-	-
	ORISKANY CREEK	ORISKANY FALLS	7 08 69	22	10%	90%	-	2,000	2	1M	1	-
	RED CREEK	RED CREEK	8 05 69	22	-	100%	-	30	-	1M	-	-
	ALLEN CREEK	ROCHESTER	7 29 69	28	-	100%	-	1,000	-	1M	1	-
	THREE MILE CREEK	ROME	6 12 69	24	-	100%	-	-	-	2M	1	-
	WALLKILL RIVER	WALLKILL	6 30 69	24	5%	95%	-	10,000	2	3M	1	-
	W BR DELAWARE R	WALTON	8 11 69	22	-	100%	-	20,000	2	4M	4	-
NORTH CAROLINA	YADKIN RIVER	PATTERSON	7 27 69	23	10%	90%	-	500	3	3M	1	-
OHIO	ASHTABULA RIVER	ASHTABULA CO	7 24 69	41	-	-	-	150	-	-	-	-
	LAKE ERIE	ASHTABULA CO	4 06 69	28	-	-	-	30	-	-	-	-
	DARRIS RUN	BUTLER COUNTY	4 28 69	42	-	-	-	926	-	-	-	-

Report of fish kills, 1969 – Cause identifiable

	River or lake	City or town	Date	Cause 1/ see code page 13	Type of fish killed: Percent game	Type of fish killed: Percent nongame	Percent kill with commercial value	Estimated fish killed	Severity 2/ see code page 13	Estimated miles or acres affected	Days	Hours
	FOUR MILE CREEK	BUTLER COUNTY	10 03 69	31	-	-	-	21,850	-	-	-	-
	BIG SANDY CREEK	CARROLL COUNTY	9 05 69	31	-	-	-	984	-	-	-	-
	BIG SANDY CREEK	CARROLL COUNTY	8 18 69	31	-	-	-	711	-	-	-	-
	BIG RUN DITCH	CLARK COUNTY	4 10 69	26	-	-	-	130	-	-	-	-
	MUSKINGUM RIVER	COSHOCTON CO	6 24 69	23	-	-	-	315	-	-	-	-
	BALLINGER RUN	DARKE COUNTY	9 05 69	22	-	-	-	130	-	-	-	-
	BIG WALNUT CREEK	DELAWARE COUNTY	9 05 69	22	-	-	-	588	-	-	-	-
	HURON RIVER	ERIE COUNTY	1 31 69	28	-	-	-	24,984	-	-	-	-
	LITTLE WALNUT CR	FAIRFIELD CO	9 01 69	23	-	-	-	155	-	-	-	-
	SUGAR CREEK	FAYETTE COUNTY	4 28 69	12	-	-	-	27,260	-	-	-	-
	OLENTANGY RIVER	FRANKLIN COUNTY	8 13 69	25	-	-	-	25	-	-	-	-
	BIG DARBY CREEK	FRANKLIN COUNTY	8 08 69	42	-	-	-	37,377	-	-	-	-
	DEER CREEK	FULTON COUNTY	8 04 69	26	-	-	-	2,000	-	-	-	-
	CHICKAMUGA CREEK	GALLIA COUNTY	9 15 69	26	-	-	-	87	-	-	-	-
	SHAWNEE CREEK	GREENE COUNTY	7 03 69	25	-	-	-	661	-	-	-	-
	ANDERSON FORK	GREENE COUNTY	5 17 69	13	-	-	-	350	-	-	-	-
	WEBBLE CREEK	GREENE COUNTY	5 21 69	5	-	-	-	66	-	-	-	-
	SOGGY RUN	GUERNSEY COUNTY	11 04 69	25	-	-	-	212	-	-	-	-
	TAYLOR CREEK	HARDIN COUNTY	4 12 69	24	-	-	-	232	-	-	-	-
	SCIOTO RIVER	HARDIN COUNTY	9 30 69	24	-	-	-	14,543	-	-	-	-
	SCIOTO RIVER	HARDIN COUNTY	7 02 69	24	-	-	-	87,400	-	-	-	-
	TAYLOR CREEK	HARDIN COUNTY	9 07 69	13	-	-	-	667	-	-	-	-
	WHITE OAK CREEK	HIGHLAND COUNTY	6 27 69	13	-	-	-	29	-	-	-	-
	LAKE ERIE	LAKE COUNTY	4 03 69	35	-	-	-	100	-	-	-	-
	TR JOHN HOLE CR	MONTGOMERY CO	8 11 69	31	-	-	-	60	-	-	-	-
	MUSKINGUM RIVER	MORGAN COUNTY	10 13 69	26	-	-	-	8,000	-	-	-	-
	KOKOSING RIVER	MORROW COUNTY	6 11 69	13	-	-	-	2,331	-	-	-	-
	DUCK CREEK	NOBLE COUNTY	9 09 69	31	-	-	-	696	-	-	-	-
	PORTAGE RIVER	OTTAWA COUNTY	4 21 69	26	-	-	-	46	-	-	-	-
	FLAT ROCK CREEK	PAULDING COUNTY	5 31 69	11	-	-	-	14	-	-	-	-
	ELK CREEK	PREBLE COUNTY	7 07 69	13	-	-	-	500	-	-	-	-
	BL FK MOHICAN R	RICHLAND COUNTY	9 21 69	41	-	-	-	15	-	-	-	-
	BUCKSKIN CREEK	ROSS COUNTY	10 06 69	13	-	-	-	98	-	-	-	-
	KNIGHT DITCH	SENECA COUNTY	6 25 69	41	-	-	-	23,056	-	-	-	-
	SHUMAKER DITCH	SENECA COUNTY	8 27 69	31	-	-	-	334	-	-	-	-
	ROCK CREEK	SENECA COUNTY	8 30 69	31	-	-	-	167	-	-	-	-
	DOG CREEK	VAN WERT COUNTY	8 03 69	11	-	-	-	17,412	-	-	-	-
	L AUGLAIZE RIVER	VAN WERT COUNTY	5 14 69	25	-	-	-	260	-	-	-	-
	MUDDY CREEK	WARREN COUNTY	6 10 69	31	-	-	-	1,652	-	-	-	-
	TR APPLE CREEK	WAYNE COUNTY	3 17 69	41	-	-	-	200	-	-	-	-
	BRUSH CREEK	WILLIAMS COUNTY	11 07 69	31	-	-	-	498	-	-	-	-
	BEAR CREEK	WILLIAMS COUNTY	10 06 69	22	-	-	-	15	-	-	-	-
	BEAVER CREEK	WOOD COUNTY	9 18 69	22	-	-	-	27	-	-	-	-
	MUL BR PORTAGE R	WOOD COUNTY	8 13 69	44	-	-	-	300,064	-	-	-	-
OKLAHOMA	SPRING RIVER	BAXTER SPGS,KS	3 25 69	21	-	-	-	-	3	17M	20	-
	STR NO E EDMOND	EDMOND	8 31 69	28	1%	99%	-	500	3	2M	3	-
	BIRD CREEK	NELAGONEY	5 18 69	24	20%	80%	-	300	4	-	-	-
OREGON	PATTERSON CREEK	BAY CITY	4 14 69	28	69%	31%	1%	20	2	1M	4	-
	FK WILLAMETTE R	COTTAGE GROVE	12 05 69	24	44%	56%	-	7,740	2	3M	-	3
	LOBSTER CREEK	GOLD BEACH	6 23 69	5	95%	5%	-	21,000	1	-	1	-
	ROCK CREEK	HAINES	6 23 69	11	100%	-	-	35	4	1M	1	-
	LOST R DIVSN CHNL	KLAMATH FALLS	7 30 69	5	50%	50%	-	5,000	3	2M	2	-
	W FK TRAIL CREEK	TRAIL	5 22 69	28	100%	-	-	2,000	1	6M	-	8
	MCKENZIE RIVER	VIDA	3 21 69	28	100%	-	-	80,000	3	15M	-	6
	HOOVER POND	WHITE CITY	2 22 69	25	100%	-	-	9,330	2	2M	6	-
PENNSYLVANIA	HODGE RUN	SCANDIA	6 21 69	44	83%	17%	-	532	1	2M	2	-
	TRIB-LT MUDDY CR	ADAMSTOWN	5 10 69	28	100%	-	-	200	1	-	-	2
	QUITTAPHILLA CR	ANNVILLE	9 04 69	21	2%	98%	-	100,000	1	7M	2	-
	SPRING CREEK	BELLEFONTE	1 18 69	25	50%	50%	-	1,189	3	1M	-	2
	KISHACOQUILLAS CR	BELLEVILLE	5 29 69	26	100%	-	-	357	4	1M	-	2
	CHESTER CREEK	BROOKHAVEN	8 08 69	44	20%	80%	-	16,456	3	5M	1	-
	TROUT RUN	BROOMALL	8 24 69	50	100%	-	-	300	4	2M	1	-
	CHARTIERS CREEK	CANONSBURG	6 30 69	28	83%	17%	-	2,850	2	15M	2	-
	OPPENHEIMER RUN	CESSNA	9 27 69	13	33%	77%	-	68	2	1M	3	-
	W BR NESHAMINY CR	CHALFONT	6 11 69	31	50%	50%	-	1,500	2	3M	2	-
	CHAPMAN DAM	CLARENDON	4 07 69	50	100%	-	-	600	2	6M	2	-
	LAUREL RUN & DAM	CLEARFIELD	6 04 69	21	100%	-	-	300	2	1M	-	-
	GLADE RUN	COOPERSTOWN	5 19 69	26	40%	60%	-	784	2	2M	2	-
	SECHLER RUN	DANVILLE	5 06 69	24	100%	-	-	154	2	1M	2	-
	N BR SUSQUEHAN R	DANVILLE	8 25 69	24	1%	99%	-	17,150	3	2M	3	-
	MONONGAHELA RIVER	DRAVOSBURG	7 04 69	44	40%	60%	-	1,220	3	2M	1	-
	BREAKNECK CREEK	EVANS CITY	6 21 69	13	30%	70%	-	332	3	1M	1	-

	DEEP RUN	FREDERICKSBURG	5 31 69	22	100%	-	-	160	3	1M	1	-
	FREEMANSBURG CA	FREEMANSBURG	6 09 69	50	100%	-	-	2,096	3	4M	-	3
	OIL CREEK	HANOVER	4 02 69	26	50%	50%	-	12,600	1	6M	5	-
	TRIB CROOKED CR	HUNTINGDON	10 12 69	13	10%	90%	-	4,000	2	1M	1	-
	ROARING RUN	JENNERSTOWN	6 07 69	21	50%	50%	-	150	2	4M	-	8
	LOYALHANNA CREEK	LATROBE	6 10 69	26	25%	75%	-	1,609	2	3M	1	-
	HERNHARTS DAM	LAUREL DALE	6 04 69	22	100%	-	-	1,750	4	2A	2	-
	LITITZ SPRING CR	LITITZ	6 14 69	31	50%	50%	-	1,000	1	5M	-	12
	LITTLE VALLEY CR	MALVERN	8 31 69	26	37%	63%	-	19,810	1	8M	1	-
	SWATARA CREEK	MIDDLETOWN	8 28 69	24	20%	80%	-	7,000	3	1M	-	4
	SHIPPING DAM RUN	MILLERSBURG	3 16 69	50	35%	65%	-	40,000	2	1M	2	4
	LAUREL RUN	MILROY	6 10 69	33	5%	95%	-	1,005	2	1M	1	-
	DONEGAL CREEK	MOUNT JOY	6 18 69	11	90%	10%	-	3,000	1	4M	2	-
	MILL CREEK	NEWMANSTOWN	6 17 69	11	75%	25%	-	550	1	4M	1	-
	POHOPOCO CREEK	PARRYVILLE	10 10 69	44	40%	60%	-	17,374	1	6M	2	-
	LT BUSHKILL CREEK	PEN ARGYL	1 17 69	44	16%	84%	-	1,750	1	4M	4	-
	WISSAHICKON CREEK	PHILADELPHIA	5 11 69	11	50%	50%	-	45	4	1M	1	-
	MAHONING CREEK	PUNXSUTAWNEY	5 24 69	31	50%	50%	-	6,494	1	8M	24	-
	B LT ANTIETAM	QUINCY	9 19 69	31	40%	60%	-	11,189	1	1M	5	-
	BERGER HOLLOW RUN	RIXFORD	4 14 69	44	-	100%	-	17	4	41M	-	-
	MINISTER CREEK	SASSMANVILLE	3 11 69	42	50%	50%	-	1,000	4	2M	3	-
	THORN CREEK	SAXONBURG	3 15 69	31	25%	75%	-	930	4	1M	2	6
	CACOOSING CREEK	SINKING SPRING	3 15 69	31	100%	-	-	50	4	2M	1	-
	DEER CREEK	STEWARTSTOWN	6 04 69	11	95%	5%	-	138	2	1M	1	-
	SUGAR CREEK	TROY	3 14 69	25	10%	90%	-	3,332	1	1M	3	-
	THOMPSON RUN	TURTLE CREEK	7 08 69	24	60%	40%	-	1,000	3	5M	1	-
	BALD EAGLE CREEK	TYRONE	5 23 69	23	85%	15%	-	1,200	1	1M	-	-
	W BR SUSQUEHAN R	WILLIAMSPORT	8 23 69	21	100%	-	-	7,000	4	25M	2	-
	LYCOMING CREEK	WILLIAMSPORT	9 15 69	24	15%	85%	-	19,551	2	1M	-	8
RHODE ISLAND	HAMILTON POND	NORTH KINGSTOWN	3 11 69	28	100%	-	-	650	4	1M	1	-
	GREEN HILL POND	SOUTH KINGSTON	7 24 69	11	30%	70%	-	2,000	2	30A	3	-
SOUTH CAROLINA	WILSON CREEK	GREENWOOD	6 - 69	31	60%	40%	-	11,000	1	8M	15	-
	PACOLET RIVER	SPARTANBURG	8 25 69	28	10%	90%	-	2,000	3	3M	-	-
SOUTH DAKOTA	GRACE COOLIDGE CR	CUSTER	11 23 69	42	30%	70%	-	5,000	1	2M	3	-
TENNESSEE	MOUNTAIN CREEK	CHATTANOOGA	7 16 69	11	75%	25%	-	300	4	-	-	-
	RUTHERFORD CREEK	COLUMBIA	7 03 69	28	10%	90%	-	630	3	-	1	-
	CONASAUGA CREEK	ETOWAH	6 13 69	23	-	-	-	82	4	-	1	-
	BEANS CREEK	HUNTLAND	8 21 69	11	93%	7%	-	73,712	1	11M	1	-
	SCIOTO CREEK	JOHNSON CITY	8 15 69	33	10%	90%	-	71	4	-	-	-
	BOONE LAKE	JOHNSON CITY	4 09 69	50	1%	99%	-	2,354,126	2	14M	6	-
	KNOB CREEK	JOHNSON CITY	7 30 69	24	5%	95%	-	2,710	2	-	-	-
	READY CREEK	KINGSPORT	8 17 69	32	25%	75%	-	4,867	2	3M	-	-
	LITTLE TURKEY CR	KNOXVILLE	10 08 69	11	-	-	-	150	4	-	-	-
	SHOAL CREEK	LAWRENCEBURG	7 01 69	50	-	-	-	-	3	-	-	-
	MCKELLAR LAKE	MEMPHIS	8 18 69	31	12%	88%	-	34,324	2	50A	2	-
	ALLEN ST PLT DIT	MEMPHIS	4 25 69	31	100%	-	-	7,625	2	8M	9	-
	WOLF RIVER	MEMPHIS	5 19 69	31	-	100%	-	7,000	3	3M	-	-
	MCKELLAR LAKE	MEMPHIS	9 28 69	31	5%	95%	-	1,000	3	-	1	-
	LOCSAHATCHIE R	MEMPHIS	7 25 69	31	-	100%	-	300	4	-	-	-
	DRY CREEK	NASHVILLE	4 25 69	28	20%	80%	-	123	4	1M	2	-
	MILL CREEK	NASHVILLE	10 15 69	22	52%	48%	-	4,092	3	7M	2	-
	RICHLAND CREEK	NASHVILLE	6 10 69	11	10%	90%	-	400	3	-	-	-
	WOLFTEVER CREEK	OOLTEWAH	7 25 69	22	33%	67%	-	5,808	2	6M	1	-
	PICKWICK LAKE	PICKWICK	4 22 69	43	10%	90%	-	200	4	4A	2	-
	E FORK STONES R	WOODBURY	10 14 69	33	-	100%	-	1,346	4	-	1	-
TEXAS	SAN JACINTO RIVER	CHANNELVIEW	11 24 69	27	-	100%	5%	300	4	1M	-	-
	CADDO LAKE	SMITHLAND	5 27 69	25	25%	75%	-	50	4	5A	1	-
	ARROYO COLORADO	BROWNSVILLE	7 20 69	11	10%	90%	-	5,000,000	2	-	-	-
	DITCH HUR PR LEVE	CLUTE - FREEPORT	9 02 69	31	10%	90%	7%	3,000	2	2M	1	-
	CORPUS CHRISTI BY	CORPUS CHRISTI	3 05 69	31	100%	-	-	-	4	-	-	-
	LAGUNA MADRE	CORPUS CHRISTI	3 04 69	31	100%	-	-	1,000	4	-	1	-
	ESPANTOSA LAKE	CRYSTAL CITY	2 15 69	22	50%	50%	-	1,000	4	3A	2	-
	RITA BLANCA LAKE	DALHART	8 25 69	13	50%	50%	-	3,000	3	250A	2	-
	RITA BLANCA LAKE	DALHART	5 18 69	13	25%	75%	-	5,000	4	1A	3	-
	MILL CREEK	EDGEWOOD	10 16 69	21	40%	60%	-	-	1	18M	4	-
	NAVASOT RIVER	FRANKLIN	5 30 69	11	10%	90%	20%	2,000	3	2M	1	-
	TRIB-CADDO CREEK	HENDERSON	4 17 69	25	20%	80%	-	50	4	1A	1	-
	LEO LEUEDKE POND	HUTTO	6 24 69	13	25%	75%	-	1,000	2	2M	1	12
	TRIB TRINITY R	IRVING	6 12 69	32	- 8	-	-	36	4	-	-	-
	PRAIRIE CREEK	KILGORE	10 08 69	25	25%	75%	-	3,000	1	4M	3	-
	PRV DRAIN STREAM	LEAGUE CITY	6 04 69	28	-	100%	-	65	4	1M	-	-
	CHOCOLATE BAYOU	LIVERPOOL	9 10 69	24	-	-	-	-	-	-	-	-
	SABINE RIVER	LONGVIEW	5 12 69	31	15%	85%	-	50	4	1M	1	-
	SAN SABA RIVER	MENARD	8 27 69	13	90%	10%	-	300	3	2M	2	-
	SAN SABA RIVER	MENARD	6 24 69	13	10%	90%	-	1,000	-	-	-	-
	NAVASOTA RIVER	NORMANGEE	5 30 69	11	30%	70%	-	2,000	4	2M	1	-
	TRINITY RIVER	RIVERSIDE	10 21 69	31	30%	70%	50%	3,000	2	18M	3	-
	SAN ANTONIO RIVER	SAN ANTONIO	1 13 69	24	50%	50%	-	130,000	1	3M	2	-
	COLORADO RIVER	SILVER	4 08 69	25	20%	80%	-	35,000	1	4M	10	-
	DRAINAGE DITCH	TEXAS CITY	9 09 69	31	-	100%	-	2,500	3	1M	-	-
	MOSES BAYOU	TEXAS CITY	10 06 69	31	-	100%	39%	500	4	-	-	-
	GALVESTON BAY	TEXAS CITY	3 25 69	24	-	100%	-	2,000	4	-	-	-

Report of fish kills, 1969—Cause identifiable

	River or lake	City or town	Date	Cause 1/ see code page 13	Type of fish killed: Percent game	Type of fish killed: Percent nongame	Percent kill with commercial value	Estimated fish killed	Severity 2/ see code page 13	Estimated miles or acres affected	Days	Hours
	INDUSTRIAL CANAL	TEXAS CITY	9 18 69	24	-	100%	-	250	3	1M	-	-
	BUFFALO LAKE	UMBARGER	5 24 69	27	20%	80%	-	1,000	4	1A	2	-
UTAH	OTTER CR	KOOSHAREM	7 02 69	11	75%	25%	-	1,200	2	-	1	-
VERMONT	HOOSIC RIVER	POWNAL	9 19 69	28	2%	98%	-	20,000	2	20M	2	-
	RD BR WHITE R	RANDOLPH	7 10 69	24	1%	99%	-	5,000	2	2M	1	3
	BLACK RIVER	SPRINGFIELD	9 02 69	24	-	100%	-	-	2	-	1	6
	WELLS BROOK	WELLS	8 01 69	50	33%	67%	-	150	4	1M	1	-
VIRGINIA	PEUMONSEND CREEK	BOWLING GREEN	8 11 69	50	98%	2%	-	10,718	2	2M	-	-
	DAN RIVER	DANVILLE	7 30 69	35	9%	91%	-	4,676	2	2M	-	-
	N FK NOLSTON R	SALTVILLE	8 11 69	24	100%	-	-	500	4	3M	-	-
	BACK BAY	VIRGINIA BEACH	7 26 69	13	30%	70%	-	10,000	2	5M	-	-
WASHINGTON	KELSEY CREEK	BELLEVUE	6 06 69	25	100%	-	-	12,500	2	3M	2	-
	NORTH CREEK TRIB	BOTHELL	1 13 69	25	-	100%	-	?	4	-	-	1
	DILLENBAUGH CREEK	CHEHALIS	5 16 69	13	4%	96%	-	10,000	2	1M	1	-
	PRIVATE POND	EDMONDS	6 19 69	50	100%	-	-	200	2	-	1	-
	REECER CREEK	ELLENSBURG	6 12 69	11	50%	50%	-	50	4	-	-	8
	QUILCEDA CREEK	MARYSVILLE	12 05 69	50	100%	-	-	-	-	1M	1	-
	E FORK WOODS CR	MONROE	5 15 69	33	100%	-	-	36	-	1M	-	1
	PUYALLUP RIVER	ORTING	12 10 69	28	90%	10%	-	26,400	2	10M	2	-
	ENNIS CREEK	PORT ANGELES	9 04 69	24	70%	30%	-	10,000	1	1M	13	-
	SAMMAMISH LAKE	REDMOND	5 12 69	50	90%	10%	-	78	4	-	-	-
	CEDAR RIVER	RENTON	6 20 69	31	75%	25%	-	45,000	2	1M	1	-
WEST VIRGINIA	TENMILE CREEK	MARSHVILLE	7 06 60	21	5%	95%	-	4,500	3	1M	-	-
	LILLYS FORK		8 15 69	28	60%	40%	-	5,000	-	5M	-	-
	COOPERS CREEK	CHARLESTON	5 15 69	25	5%	95%	3%	17,000	2	-	1	-
	COOPERS CREEK	CHARLESTON	5 15 69	25	5%	95%	-	17,000	2	3M	1	-
	WHEELING CREEK	TRIADELPHIA	7 18 69	21	5%	95%	-	40,500	2	7M	1	-
	KNOB FORK	UNIONTOWN	8 27 69	28	8%	92%	-	16,700	2	2M	2	-
WISCONSIN	GRASS CREEK	ATHENS	11 07 69	22	25%	75%	-	1,200	2	4M	5	-
	TRIB MENOMONEE R	GERMANTOWN	6 28 69	25	100%	-	-	800	2	2M	3	-
	BLACK RIVER	MEDFORD	9 20 69	28	30%	70%	-	2,000	1	3M	2	-
	TRIB PESHTIGO R	PESHTIGO	8 25 69	11	10%	90%	-	1,000	1	5M	-	-
	OAK CREEK	SOUTH MILWAUKEE	12 02 69	26	100%	-	-	30	3	1M	-	1
WYOMING	GOWAN RESERVOIR	CASPER	6 02 69	25	60%	40%	-	100	4	20A	3	-
	NO PLATTE RIVER	CASPER	6 - 69	25	-	-	-	-	-	-	-	-
	POISON SPRINGS CR	CASPER	3 06 69	25	-	-	-	-	-	2M	-	-
	NO PLATTE RIVER	CASPER	7 22 69	25	-	-	-	-	-	-	-	-
	WAGONHOUND CREEK	DOUGLAS	6 16 69	44	10%	90%	-	2,000	1	2M	2	-

Report of fish kills, 1969—Cause unkown

Table 13

	River or lake	City or town	Date	Cause 1/ see code page 13	Type of fish killed: Percent game	Type of fish killed: Percent nongame	Percent kill with commercial value	Estimated fish killed	Severity 2/ see code page 13	Estimated miles or acres affected	Days	Hours
ALASKA	SAWMILL CR OUTLET	SITKA	12 20 69	90	-	-	-	2,000	2	-	-	?
CALIFORNIA	3 MILE SLOUGH	SHERMAN ISLAND	- - 69	90	100%	-	-	1,000	-	-	-	-
	ESTUARY-GOVT IS	ALAMEDA COUNTY	6 14 69	90	100%	-	-	6	-	-	-	-
	DELTA MENDOTA CNL	FRESNO COUNTY	- - 69	90	100%	-	-	25	-	-	-	-
	CLEAR LAKE	LAKE COUNTY	9 27 69	90	-	100%	-	20,000	-	-	-	-
	CLEAR LAKE	LAKE COUNTY	5 28 69	90	-	100%	-	500	-	-	-	-
	CLEAR LAKE	LAKE COUNTY	8 28 69	90	5%	95%	-	2,000	-	-	-	-

	BOLINAS BAY	MARIN COUNTY	8 21 69	90	100%	-	-	40	-	-	-	-
	BOWER RANCH POND	MERCED COUNTY	- - 69	90	100%	-	-	575	-	-	-	-
	BEL MARIN KEYS	NOVATO	6 11 69	90	29%	71%	-	21	-	-	-	-
	SUISIN BAY	PORT CHICAGO	7 19 69	90	84%	16%	-	89	-	-	-	-
	LOS TRANCOS CREEK	PORTOLA VALLEY	9 08 69	90	-	100%	-	150	-	-	-	-
	CREEK-FRMONT PARK	RIVERSIDE CO	4 08 69	90	71%	29%	-	35	-	-	-	-
	E NATOMAS MAIN DR	SACRAMENTO CO	- - 69	90	-	100%	-	10,250	-	-	-	-
	LIVE OAK CANAL	SAN JOAQUIN CO	10 22 69	90	-	100%	-	100	-	-	-	-
	STANISLAUS RIVER	SAN JOAQUIN CO	- - 69	90	100%	-	-	250	-	-	-	-
	SMITH CA-YOSEMITE	SAN JOAQUIN CO	- - 69	90	-	100%	-	10,050	-	-	-	-
	BEAR CREEK	SAN JOAQUIN CO	- - 69	90	-	100%	-	75	-	-	-	-
	CRAWFORD SLOUGH	SOLANO COUNTY	10 23 69	90	100%	-	-	450	-	-	-	-
	SAN JOAQUIN RIVER	STANISLAUS CO	7 24 69	90	6%	94%	-	102	-	-	-	-
	MORMON SLOUGH	STOCKTON	- - 69	90	29%	71%	-	1,750	-	-	-	-
	MORMON SLOUGH	STOCKTON	- - 69	90	-	100%	-	500	-	-	-	-
CONNECTICUT	QUINNIPIAC RIVER	CHESHIRE	9 17 69	90	-	100%	-	-	3	-	-	-
FLORIDA	LAKE BONNETT	LAKELAND	7 02 69	90	5%	95%	-	-	3	-	2	-
	LAKE WINTERSET	WINTER HAVEN	9 12 69	90	50%	50%	-	-	4	3RA	5	-
GEORGIA	BEAR CREEK	ADEL	6 22 69	90	80%	20%	-	1,875	2	-	-	-
	WITHACOOCHE RIVER	ADEL	7 16 69	90	80%	20%	-	450	-	2M	-	-
	PACHITA CREEK	MORGAN	7 01 69	90	50%	50%	-	300	4	2M	-	-
HAWAII	ALA MOANA LAGOON	HONOLULU	4 08 69	90	50%	50%	30%	2,100	2	1A	1	-
	PAPAA STREAM	KILAUEA,KAUAI	9 18 69	90	80%	20%	-	500	1	-	1	-
ILLINOIS	PECATOICA RIVER	HARRISON-ROCKTN	2 23 69	90	88%	12%	12%	173,000	2	17M	-	-
	TRIB MACKINAW RI	ANCHOR	9 13 69	90	2%	98%	-	5,691	4	2M	-	12
	COOPERS DEFEAT CR	CASTLEON	4 30 69	90	2%	98%	13%	34,622	1	7M	-	12
	BAKERS DRY DITCH	DEER GROVE	4 09 69	90	2%	98%	98%	3,000	1	2M	2	-
	SO BR KISHWAUKEE	DE KALB	9 06 69	90	19%	81%	7%	12,626	4	2M	2	-
	KASKASKIA RIVER	SULLIVAN	8 16 69	90	21%	79%	65%	5,905	3	3M	-	-
	JORDAN SL-EMBRS R	VILLA GROVE	8 15 69	90	35%	65%	47%	6,739	2	3M	-	-
INDIANA	CHENEY CREEK	FISHERS	7 04 69	90	-	100%	-	16,500	2	-	-	-
	LATTAS CREEK	SWITZ CITY	6 30 69	90	1%	99%	-	900	2	1M	-	-
	BUCK CREEK	TIPTON	9 05 69	90	-	100%	-	200	-	1M	-	-
IOWA	WHITEBREAST CREEK		4 25 69	90	10%	90%	-	150	4	4M	-	-
	BURSHY CREEK	DUNCOMB	9 26 69	90	1%	99%	-	1,000	1	5M	-	-
	BOYER RIVER	EARLY	9 28 69	90	2%	98%	-	2,100	1	10M	2	-
KANSAS	TRIB FOUR MILE CR	MELROSE	8 18 69	90	100%	-	60%	200	3	1M	1	-
	NO FK NINNESCAH R	ARLINGTON	7 11 69	90	25%	75%	40%	10,000	2	30M	2	-
	SPRING CR-DODGE L	HIAWATHA	9 28 69	90	40%	60%	30%	300	3	3M	5	-
	SO FK NINNESCAH R	KINGMAN	7 12 69	90	5%	95%	20%	5,000	3	9M	2	-
	TRIB MARMATON R	MORAN	10 04 69	90	90%	10%	25%	2,000	1	3M	7	-
LOUISIANA	OUACHITA RIVER	MONROE	7 10 69	90	20%	80%	60%	1,500	3	-	2	-
MAINE	PLEASANT LAKE	WEBSTER	7 01 69	90	10%	90%	-	300	4	339A	-	-
MICHIGAN	BLACK RIVER	ZEELAND	8 15 69	90	15%	85%	-	200	4	-	-	-
MINNESOTA	STRAIGHT RIVER	OWATONNA	10 27 69	90	25%	75%	-	200	4	6M	2	-
	GILMORE CREEK	WINONA	9 13 69	90	25%	75%	-	100	-	-	-	-
MISSOURI	FOX RIVER	KAHOKA	6 22 69	90	-	-	-	-	2	-	1	-
	MILL CREEK	RIVER AUX VASES	9 04 69	90	40%	60%	-	3,000	1	1M	1	-
	SUGAR CREEK	OREXEL	5 17 69	90	5%	95%	-	1,200	1	4M	-	-
MONTANA	RATTLESNAKE CREEK	MISSOULA	11 07 69	90	100%	-	-	50	4	-	1	-
NEBRASKA	WILDHORSE CREEK	BAYARD	5 25 69	90	1%	99%	99%	150	3	1M	-	-
	SALT CREEK	LINCOLN	6 03 69	90	7%	93%	93%	800	3	3M	-	-
	BUELLSDORFF POND	TALMAGE	3 20 69	90	100%	-	-	66	-	2A	-	-
NEW HAMPSHIRE	STUMP POND	AMHERST	7 12 69	90	100%	-	-	-	3	5A	-	12
	LILLY POND	GILFORD	6 09 69	90	100%	-	-	500	4	51A	-	-
	CRYSTAL LAKE	MANCHESTER	8 25 69	90	100%	-	-	100	4	19A	1	-
NEW JERSEY	MILL BROOK	MILL BROOK	8 12 69	90	100%	-	-	100	-	2M	2	-
	WESLEY LAKE	ASBURY PARK	- - 69	90	-	100%	-	400	2	-	-	-
	SILVER LAKE	CLEMENTON	- - 69	90	-	-	-	-	4	4A	4	-

Report of fish kills, 1969 – Cause unkown

River or lake	City or town	Date	Cause 1/ see code page 13	Type of fish killed: Percent game	Type of fish killed: Percent nongame	Percent kill with commercial value	Estimated fish killed	Severity 2/ see code page 13	Estimated miles or acres affected	Days	Hours
NEW YORK											
SCHUBERTS FARM PD	MILLER VALLEY	A 22 69	90	50%	50%	-	-	-	1A	2	-
JOHNSONS FARM PD	OLDWICK	7 18 69	90	100%	-	-	-	2	3A	2	-
HOLLOW BROOK	POTTERSVILLE	6 20 69	90	50%	50%	-	-	1	1M	-	6
HIRSCHS LAKE	RUNNEMEDE	5 20 69	90	100%	-	-	200	4	1M	-	1
BR SIX MILE RUN	SOMERSET CO	5 30 69	90	-	100%	-	500	3	3M	-	-
NEW YORK											
TRIB WOLF CREEK	CASTILE	A 04 69	90	10%	90%	-	1,500	3	2M	-	-
OAK ORCHARD CREEK	ELBA	10 14 69	90	-	100%	-	2,000	3	-	-	-
ELLICOTT CREEK	WILLIAMSVILLE	4 23 69	90	2%	98%	-	10,000	2	-	-	-
NORTH CAROLINA											
LAKE WYLIE	BELMONT	3 - 69	90	-	100%	-	-	4	-	-	-
LIVINGSTON CREEK	DELCO	9 28 69	90	60%	40%	-	300	4	2M	-	-
MCFADYEN LAKE	FAYETTEVILLE	4 21 69	90	47%	53%	-	2,000	3	25A	1	-
TOWN FORK CREEK	GERMANTOWN	5 06 69	90	28%	72%	4%	3,000	1	4M	1	-
HIGH ROCK LAKE	SALISBURY	7 - 69	90	20%	80%	-	500	4	1A	-	-
TIDAL POOL	SURF CITY	9 - 69	90	-	-	100%	1,000	1	-	-	-
SWIFT CREEK	VANCEBORO	4 12 69	90	10%	90%	-	3,000	-	-	-	-
WATERVILLE LAKE	WAYNESVILLE	7 - 69	90	-	100%	-	48,744	2	-	-	-
ROANOKE RIVER	WELDON	7 - 69	90	-	100%	-	-	4	-	-	-
INTERCOASTAL WTWY	VAUPON BEACH	8 - 69	90	-	-	-	-	4	-	-	-
OHIO											
ST MARYS RIVER	AUGLAIZE COUNTY	7 28 69	90	-	-	-	149	-	-	-	-
MAD RIVER	CHAMPAIGN CO	8 21 69	90	-	-	-	400	-	-	-	-
N FK BEAVER CREEK	COLUMBIANA CO	7 10 69	90	-	-	-	144	-	-	-	-
TR MAHONING RIVER	COLUMBIANA CO	5 30 69	90	-	-	-	41	-	-	-	-
PIPE CREEK	ERIE COUNTY	9 08 69	90	-	-	-	11	-	-	-	-
MASSIE CREEK	GREENE COUNTY	8 28 69	90	-	-	-	37,664	-	-	-	-
MUDDY CREEK	HAMILTON COUNTY	8 15 69	90	-	-	-	601	-	-	-	-
MUDDY CREEK	HAMILTON COUNTY	10 22 69	90	-	-	-	10	-	-	-	-
HOG CREEK	HARDIN COUNTY	10 13 69	90	-	-	-	169	-	-	-	-
CLEAR CREEK	HIGHLAND COUNTY	8 22 69	90	-	-	-	484	-	-	-	-
E BR ROCKY RIVER	LORAIN COUNTY	8 19 69	90	-	-	-	39	-	-	-	-
HOG RUN	MIAMI COUNTY	8 30 69	90	-	-	-	235	-	-	-	-
BRUSH CREEK	MIAMI COUNTY	9 08 69	90	-	-	-	282	-	-	-	-
WOLF CREEK	MONTGOMERY CO	3 18 69	90	-	-	-	13	-	-	-	-
LICKING RIVER	MUSKINGUM CO	9 02 69	90	-	-	-	118	-	-	-	-
TWIN CREEK	PREBLE COUNTY	10 17 69	90	-	-	-	234	-	-	-	-
TURTLE CREEK	WARREN COUNTY	9 10 69	90	-	-	-	92	-	-	-	-
JACKSON DITCH	WOOD COUNTY	9 05 69	90	-	-	-	10	-	-	-	-
PENNSYLVANIA											
LITTLE MUDDY CR	ADAMSTOWN	5 06 69	90	100%	-	-	747	1	2M	-	5
MONONGAHELA R	CHARLEROI	9 10 69	90	2%	98%	-	400	4	20M	2	-
BUFFALO CREEK	CHICORA	3 20 69	90	50%	50%	-	455	2	1M	-	-
MONONGAHELA R	NEWELL	8 11 69	90	1%	99%	-	15,500	2	50M	4	-
SOUTH CAROLINA											
GILDERS CREEK	GREENVILLE	5 29 69	90	-	100%	-	250	3	1M	-	3
HUFF CREEK	GREENVILLE	12 03 69	90	10%	90%	-	250	3	3M	-	-
WRIGHT RIVER	HARDEVILLE	7 14 69	90	100%	-	-	492	4	3M	1	-
TENNESSEE											
CONASAUGA CREEK	ETOWAH	7 25 69	90	-	-	-	-	3	1M	-	-
OLD HICKORY LAKE	GALLATIN	2 24 69	90	-	-	-	-	-	-	-	-
RICHLAND CREEK	NASHVILLE	6 15 69	90	5%	95%	-	6,000	2	2M	-	-
TEXAS											
MUSTANG BAYOU	ALVIN	10 01 69	90	-	100%	-	60	4	1M		-
SABINE RIVER	CARTHAGE	5 07 69	90	25%	75%	-	-	4	10M	1	-
SAN JACINTO RIVER	CONROE	4 29 69	90	30%	70%	40%	10	4	1M	1	-
LITTLE CYPRESS CR	CYPRESS	4 24 69	90	40%	60%	90%	3,000	2	5M	-	-
RIO DRAW	FRIONA	12 - 69	90	100%	-	-	2,000	1	1M	-	-
INDUS DRAINAGE D	LA PORTE	4 02 69	90	3%	97%	30%	40	4	1M	1	-
CLEAR CREEK	LEAGUE CITY	4 30 69	90	15%	85%	75%	500	4	3M	1	-
LAKE TEXOMA	POTTSBORO	9 01 69	90	-	100%	-	-	4	1A	2	-
SWANS LAKE	TEXAS CITY	10 01 69	90	3%	97%	50%	7,000	2	-	1	-
CLEAR CREEK	WEBSTER	12 02 69	90	-	-	-	-	-	-	-	-
WASHINGTON											
KELSEY CREEK	BELLEVUE	5 09 69	90	100%	-	-	3	4	1M	1	-
DES MOINES CREEK	DES MOINES	7 23 69	90	100%	-	-	100	4	1M	1	-
SNOHOMISH RIVER	EVERETT	12 08 69	90	-	-	-	-	3	2M	1	-
HYLEBOS WATERWAY	TACOMA	11 17 69	90	-	-	100%	500	-	1M	1	-
YAKIMA FISH HATCH	YAKIMA	12 07 69	90	100%	-	-	35,000	2	-	1	-
WYOMING											
MID POPO AGIE R	LANDER	A 04 69	90	80%	20%	-	200	2	-	1	-